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April 2003

Volume 71 No 4



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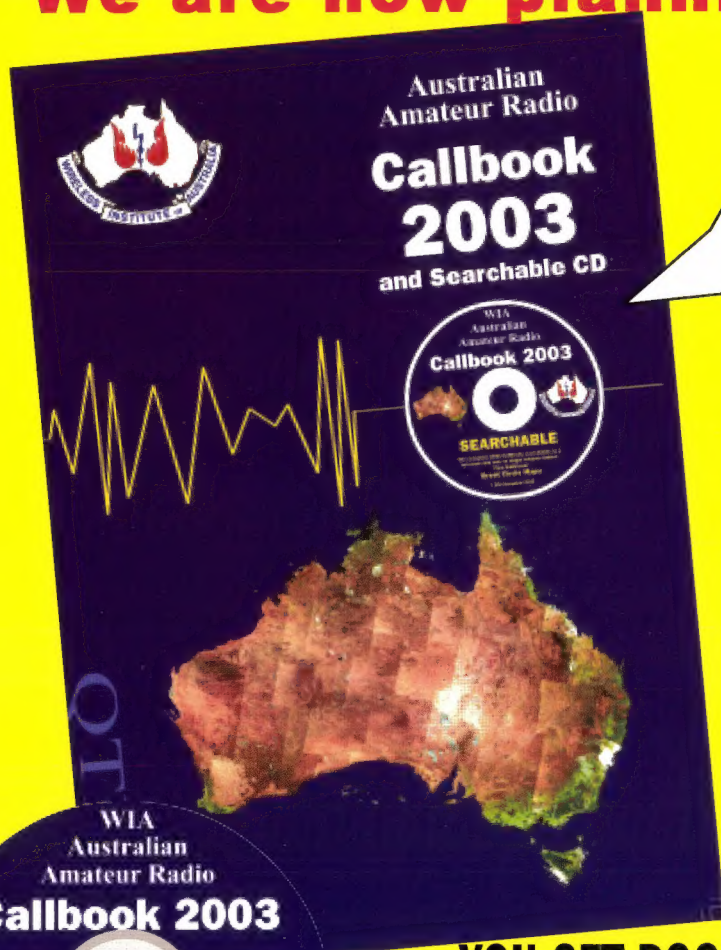
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**Divisional Contact details on page 56**

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# Amateur Radio

Volume 71  
Number 4  
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## Our Cover this month

Alan Gibbs VK6PG has been writing his 'Hamshack Computers' column for Amateur Radio for two years now. During this time he has collected a devoted following of readers who eagerly await each issue. Alan writes a special column this month on Computer Security.

### Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

### Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at \$4.00 each (including postage within Australia) to members.

### Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

### Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.



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## Editorial Comment

Colwyn Low VK5UE

## Using opportunities

Well another month has passed and I share my thoughts with you again. I have had some pleasing comments on the March issue of Amateur Radio magazine. I only hope we can keep up a standard close to it in the future.

I also was chided for the size of the Contest information. However not every contest interested amateur is on the net and so the Australian contest rules will continue to be placed in full.

I did get out on the John Moyle Field Day. Had a slow start but did get the Beetle packed by 2 pm and drove over 50 km to Long Plains. It would have been better to work back into Adelaide, if the site had been further to the west at Dublin. I will know better next time. However once committed I persevered and at teatime moved back towards Adelaide, to Para Wirra Recreation Park. This then became a fun evening with four stations operating in close proximity. This way we could use the Park facilities and sleep out of the weather. One interesting aside. When you work a station on 2 m at Warooka, as I did from Long Plains, and the distance on the map from location dot to location dot is 147 km. You realise you were a kilometre or so to the east and he could have been a kilometre or so to the west then maybe you should be getting 30 points not 20. However you did not have the exact location you operated from and you did not query the other station closely enough about his location so you've lost 10 points !!!!! Bugger. Next time come properly prepared.

The WIA Federal Convention is running April 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> April in the Glenelg Convention Centre. One of the topics for discussion is future Amateur Radio licencing. There are several articles on this topic in this month's issue. Having read through these more than once checking the English etc, as Editors have to do, I came to the realisation that we are talking about Amateur radio in a modern IT world where long distance communication and local contact communications are beyond the wildest dreams of most of us amateurs over 60 when we sat for our licences. It is no wonder we need a modern exam system. We also need to accept that most of us use commercial equipment. We would not as one letter put it "point a soldering iron at it". In the light of today's technology and the easily realised developments in the next few years let us do some lateral thinking and get the ACA onside for a evolutionary change in Amateur Radio operation, while still maintaining the principles on community support, self training and training a pool of people with a wide knowledge of communications technology with a component of radio linking.

My final shot is if you have a licence use the opportunities it provides and if you do not then get one. There are several readily available courses that can get you there. Just by the way 5 words per minute morse can just about be deciphered with a crib sheet.

## PLAN AHEAD

### BARCFest

Brisbane Amateur Radio Club Fest  
(BARCFEST) is on again this year,  
on 10th May, at the Holland Park  
Bowls Club  
49 Abbotsleigh Street,  
Holland Park, Qld

Trans Tasman  
Contest 80 m  
Phone: 24 May  
CW: 7th June



## Federal AGM around the corner

The time of the Federal AGM is rapidly approaching. The AGM is the main forum at which the WIA divisions get together to review the past year, and set policy for the year ahead. This year there are a number of motions being debated:

- A proposal to adopt a UK style foundation licence.
- A motion addressing LCD changes resulting from WRC 2003
- Planning for the WIA 100<sup>th</sup> anniversary in 2010.

If you have a view on the above subjects I would urge you to make contact with your Divisional Federal councillor in order to make your views known. This also applies throughout the year. If you have a view on any subject then please drop Colwyn, our editor, a line. Your views are important, please let us know what they are.

### Federal Coordinators

One of the other activities that we perform at the AGM is to receive reports from the various Federal coordinators. This year we have had a number of coordinators stand down from often many years of outstanding service to amateur radio. I would like to express my thanks to all of you who have provided assistance throughout the last year. Without your assistance much of the excellent work performed would not have been achieved. However we always need more volunteers. If you have the time to devote to something that interests you such as: contesting, publishing, the history of amateur radio, or for that matter any aspect of amateur radio please talk to your local division or directly to me and I will put you in contact with the people you need to speak to.

### More threats to the 70cm band

Gilbert Hughes and I met with the ACA in early March 2003 to be briefed on the future spectrum requirements for emergency service communications in Victoria. I know that many of you will

be upset that government is seeking to take away yet more amateur radio spectrum and allocate it to other services. There are though some factors that we should consider when looking at these proposals:

- Here in Australia we take for granted a high level of access to emergency services. Recent experience of bush fires on the East coast shows us just how dependent we all are on such services in order for us to go about our daily lives in safety.
- Current evidence indicates that we are a declining group. Levels of licensing of amateurs in Australia is falling and a direct consequence of this is a reduction of any claims that we have for access to spectrum on the basis of large number of amateur operators needing access to this spectrum.
- Surveys conducted of the spectrum being sought indicate a very low level of utilisation in the amateur segments.

The ACA liaison committee are in active negotiation with the ACA to ensure that any changes to the amateur spectrum allocation are handled in a way to minimise the impact upon current amateur operations (such as for example repeater linking in the 70cm band). In addition we have proposed that we examine ways that the current LCD can be changed to permit alternate solutions to the issues that such spectrum reallocation would entail. I will be providing more information on all aspects of these proposals as soon as they become available.

### The Foundation Licence opportunity

The subject of the foundation licence is one that I believe is extremely important to the future of amateur radio. As noted above amateur numbers are declining. Recently I was lucky to be able to attend a presentation by Bob Whelan, G3PJT, about the British experience on the

introduction of such a licence scheme. One of the major drivers behind the British initiative was the observation that if current trends continued, that within a period of 5 years the intake of new members to the amateur radio community would drop off to zero. You do not need to be a rocket scientist to recognise that we face a similar threat to the hobby here in Australia and then work out what this means for the future of the hobby. Some of the things that strike me as important to the debate are:

- We all expect that WRC 2003 will formally remove the need to have knowledge of Morse as a prerequisite for gaining an amateur licence.
- We all know that today's society has different expectation in terms of education and access to technology to many of us old timers.
- We all know that the future of the hobby is at threat due to declining numbers
- We all know that there is increased pressure on the amateur radio spectrum
- We all know that we need to do something to "fix" this situation.

I believe that the foundation licence is one way to do this. Experience in the UK has shown that the new entrants are all very keen to progress through the system – in fact many clubs are struggling to teach the new foundation licence applicants at the same time as the next stage licence courses (and self learning is of course at the heart of the hobby). Experience has also shown that the newly licenced operators do comply with the restrictions on power and equipment that have been mandated. I would urge you all to give some serious thought to the issue and also to make your views heard. It may be the last chance that we have to ensure the future of the hobby that we all hold so dear.

73s and I look forward to hearing your comments, either directly or via the divisions. All the best in amateur radio

ar



# Computer Security

## *It won't happen to me! Think again*

Hardly a day passes without the writer finding out that someone has been 'hacked', is receiving e-mail spam, suffers from virus attacks, or that their computer has totally crashed. Computer Security has become the 'buzzword' around the on-line world of digital data exchange. Indeed, this topic is huge and plagues most users who connect to the Internet or who exchange disks with other computer users. Once your computer is connected to the Internet, the gate is wide open to attacks from anyone who can 'see' that your machine is on-line. This article will probably be the most important in the Ham Shack Computers series, irrespective of readers' personal skills, software choices or their assertiveness in trying to protect their own system(s).

### Computer Hacking

Every year, billions of dollars are spent by government and corporate industries on attempting to protect their privacy, and keep others from 'peeping' into their networks and 'stealing' confidential information. In addition, millions of e-mail messages pass via the Internet every second each announcing crucial information for others to see and copy.

No one is immune from invasive attacks by undesirables who take amazing steps to find information about you and the ways that you are using your computer. Frightening indeed!

Banks, corporate businesses, security authorities, government agencies and even military satellite networks have all been 'hacked' to the detriment of their users. Today, an effective way to bring down world economic stability is to 'attack' the very network that strives to stabilise and promote international dialogue, trade and information exchange.

Spreading computer viruses is just one method of doing this - devastating continents and world networks costing billions to restore. It's clear that most of the world's espionage is being conducted on-line. Some might be legitimate, and in the best interests of the agency. However, many are clandestine and ruthless in gathering confidential information for nefarious reasons.

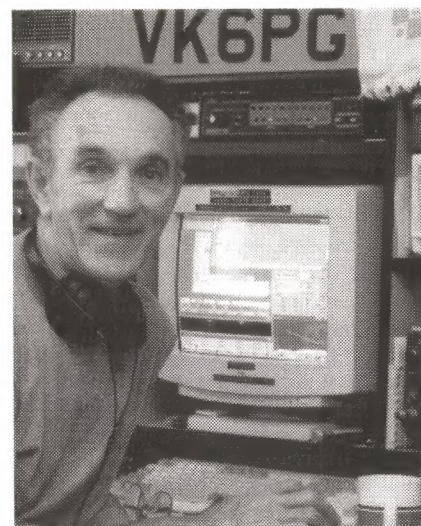
### It won't happen to me!

Think again. Just because you are a humble Radio Amateur (RA) who is enjoying the delights of the on-line world, you too CAN, and WILL be caught every time you log onto the Internet to send a short message or just surf around looking for goodies.

Every time you use a radio, others can hear you, read your messages and gather information about you. Even your own call sign tells others where you are, your name, your postal address, email information and other data. The on-line world does the same but much deeper by finding out about your computer, the hardware you use, detailed information about your software, your user name, passwords and even your 'plastic card' numbers, your bank account, and other confidential information. That's just for starters!

### What's the solution?

If there were a total solution, everyone would be using it! However, there are steps that can be taken to minimise the problems.. NEVER give out your 'plastic card' account or PIN number by purchasing merchandise on-line, ALWAYS check with your bank about their security policy. If you do, or check your bank balance on-line, install appropriate software to minimise the possibility of hacking, receiving viruses



Alan Gibbs, VK6PG

and spam mail, and other techniques used by the dreaded invasion seeking communities.

If you can't be bothered about all this stuff - expect the worst and be prepared to live with it! Stay offline.

Most viruses are spread by unsuspecting e-mail senders who might be friends or members of your local club or society. However, many are sent to you from others who have 'pinched' your e-mail address from news groups, popular e-mail sites like HotMail, Yahoo, FreeServe etc. The first step is to quickly dump these sites and use a proper ISP based e-mail service which is less likely to 'on sell' its subscriber information data bases.

DO NOT use popular e-mail programs linked to an Internet browser that require messages to be composed, sent and received whilst on-line. The process gobbles up download times, solicits 'drop down advertising', opens up unwanted windows, and broadcasts your personal information worldwide.



## MailWasher

Most computer users connect to a local Internet Service Provider (ISP) and download mail without bothering to look seriously to see if ALL the messages are legitimate. WRONG! The right method is to gather a detailed list of messages held by the ISP mail server BEFORE you choose to accept them and download to your computer. Extra software is needed on your computer to 'snoop' at the messages before they damage your computer. MailWasher (2) does this very effectively, and gives you the choice to accept, delete or bounce messages back to the sender. The writer has found that if a persistent spam sender - receives back their own unsolicited spam mail, then they very soon have their own mail boxes full of their own rubbish and stop the practice. Once you have cleared the junk mail from the ISP, then - and only then - you are clear to download and enjoy your own legitimate mail.

MailWasher offers warnings if a virus is possibly attached to a message, with added notifications about potential spam messages to help you make choices. Just like a well-known rubbish trucking company in Perth called Buckley's. Their motto is "... You've got Buckley's - satisfaction guaranteed or double your rubbish back..."

Every reader will want to download and install MailWasher. It's freeware in the unregistered version and delightfully easy to install and use everyday. Just open a new folder in C:\Program Files\MailWasher and place the downloaded file to the new folder - then 'click' to execute and install. Once installed, look through all the Options in the Tools menu and insert your own data about your ISP (POP mail

account details etc), your default mail program, friends e-mail addresses and other data. For advanced users, DNS identities of known spam perpetrators can also be added. The options will change once you feel comfortable with the program, and gained experience.

Next time you connect on-line and check for email, open MailWasher first. A 'connect' menu appears on top of the MailWasher window. 'Click' to connect and your modem will do all the work for you. Once the ISP acknowledges the connection, MailWasher takes control and 'peeps' into your ISP POP mailbox listing all the messages on the MailWasher screen for you to scrutinise. You can choose to delete, bounce or black list messages. Once done, select Process Mail and MailWasher finishes the job AND opens your e-mail program to download your WANTED e-mail. The process is quick and simple, costs nothing, and traps a good 95% of spam messages with viruses attached! Excellent value indeed!

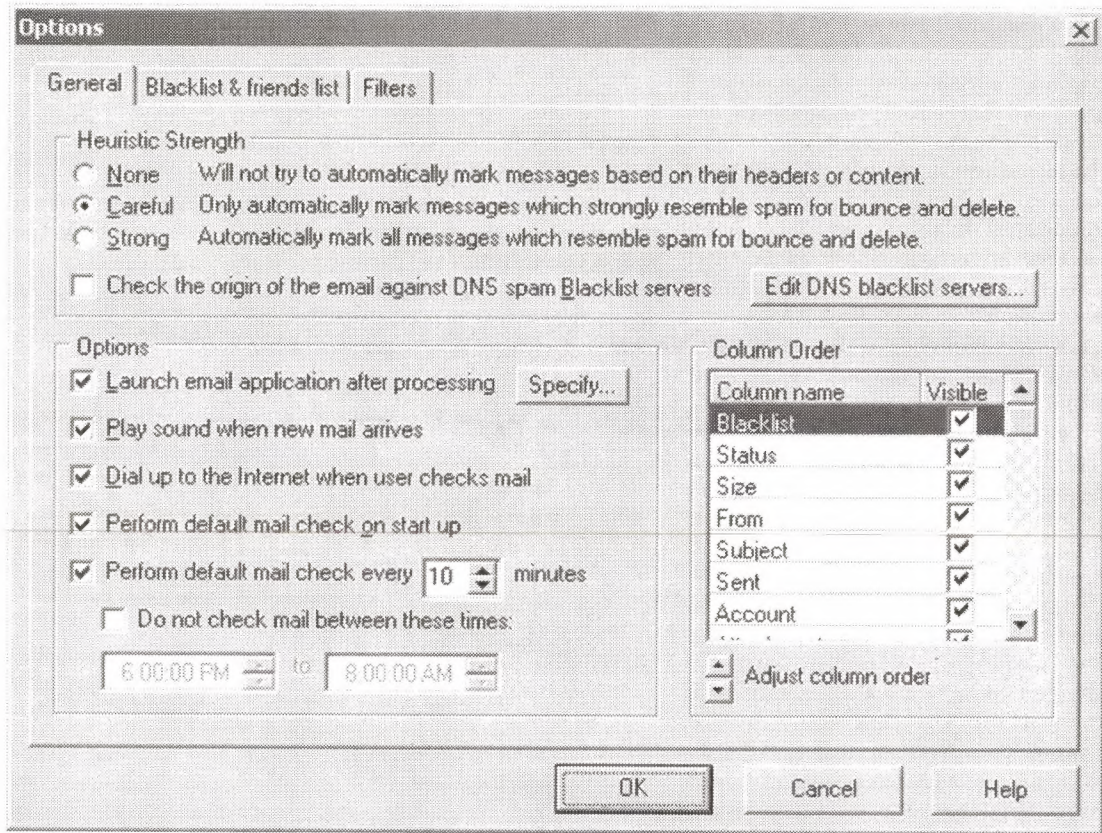
The above image shows some of the MailWasher options that can be selected. Work steadily through all the settings until a reasonable level of protection has been achieved. Remember, you can

change the settings at any time as your experience expands. MailWasher was evaluated for three months to determine suitability, stability on all Windows platforms through Win 95/98-XP, and ease of use before any decision was made and this article was considered. There are many other filtering programs, some at a very high retail price, but MailWasher beats the opposition hands down - and it's FREE!

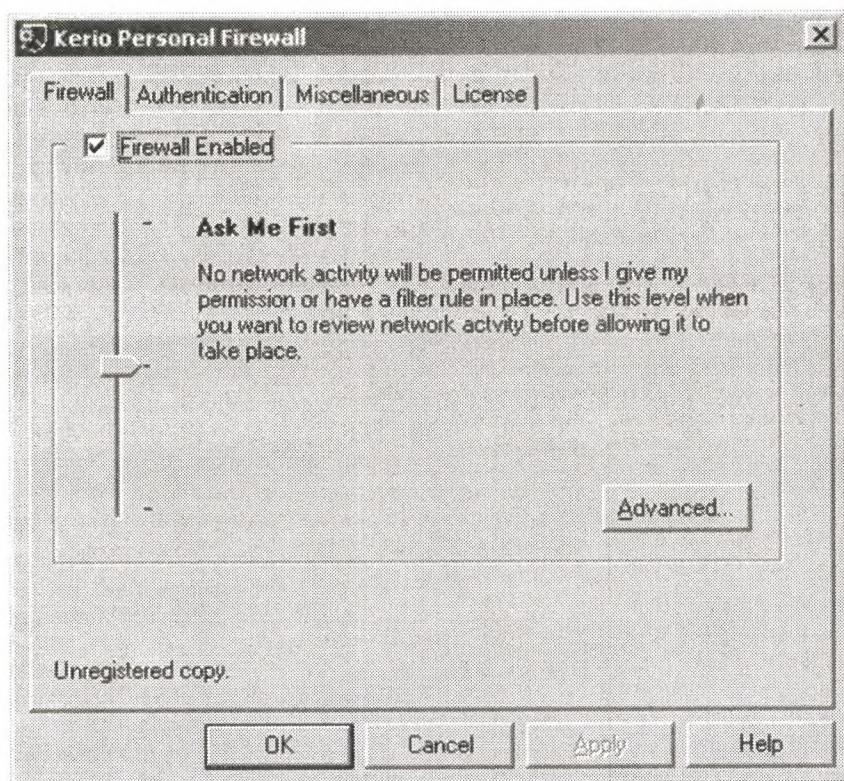
## Personal Firewall

MailWasher was your first assertive step in fighting viruses, spam and hackers hell bent on the destruction of your AR computing environment. However, that's only a small part of your armour used to defend your honour. Installing a Personal Firewall is the second step after you've settled down with MailWasher.

A Personal Firewall (PF) (3) is a software program that can totally screen everything between your computer and the outside world. Any device that needs to connect to you, or from your computer to any outside device needs your permission to 'connect'. All this might sound daunting to the new computer user.







However, a Personal Firewall has become a 'must have' package these days. If you choose not to implement this - be prepared for some very nasty activities. You have BEEN WARNED. The Personal Firewall might seem complex to most users. Indeed, modern software has come a very long way, and you'll find that setting up a new Personal Firewall is very easy - especially with a windowed interface, and the ability to check every connection in detail if doubts exist. In short, firewalls stop the 'hackers', advertisers, 'net-trawlers' and others from stealing your personal information.

There is a number of 'Brand Named' PF products on the market priced around the \$130 range. Many of these have been surveyed and widely evaluated by popular computer magazines. Most are marginal at best and not worth your hard-earned cash as a protective investment. Kerio Personal Firewall (3) outshines most commercial products on the market, and is FREE to single, non-commercial users. Just because it's free, never underestimate the power of Kerio PF working on your Ham Shack Computer. It's a full-blown commercial product and extremely powerful, yet easy to maintain by new computer users. For advanced users, Kerio PF has all the 'anti-snooping tools'

needed to detect and kill unwanted 'snooping' - especially the common 'snoops' from very well known software vendors.

## Kerio PF in Action

Downloading Kerio is a breeze even with a sluggish 56kB dialup link. Dump the file into a new Kerio folder in C:\Program Files\Kerio. 'Click' on the new file in the Kerio folder and follow the instructions to install the software. It takes about 15 seconds to install, and roughly five minutes to run the program

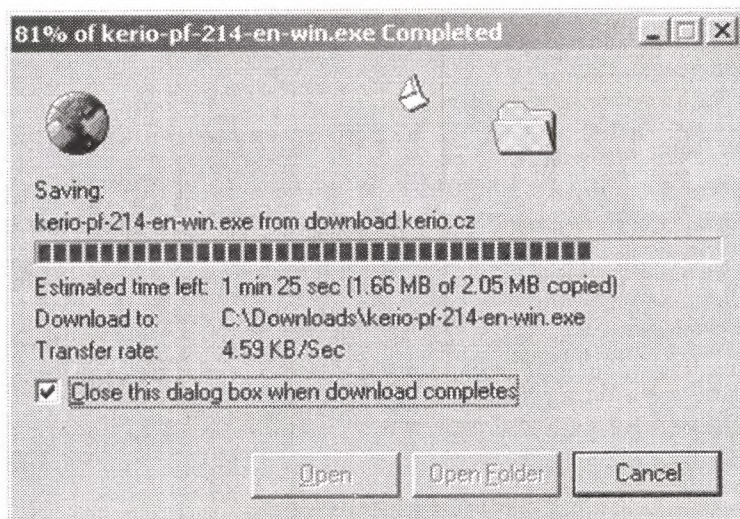
and insert the required personal settings. Just like MailWasher, Kerio will work like a charm first time on all Windows platforms.

Now comes the fun part. Connect to the Net via the 'connect menu' using MailWasher. There will be several notices that appear in the middle of your screen. The first will be from your ISP asking for your permission to connect. Tick the box and push the Permit button. The connection is made to the ISP. Another notice will ask permission for MailWasher to connect, then another to collect mail headers, and yet another when you finally open your e-mail program ... and so on. Take heart because giving permission for each and every request made by your computer software to connect with a desired location, builds a profile log within Kerio of your wanted connects. This is quite normal, so work carefully through each request until each and every application has been permitted.

Although this looks complex, it makes good sense to build a Kerio permission profile. Once done you can relax and enjoy the Internet goodies. However, other permission requests will appear. Examples being Norton Anti-Virus 2003 live updates, browser cookie requests, FTP sites, EchoLink connects and other interactive activities to which you specifically want to use.

Other notifications will appear from sources unknown to you, and seem suspicious. 'Click' the NO option if doubt exists and Kerio will block data interchange from now onwards.

Kerio works in the background for you. Once most of your favourite permissions





have been granted, and the undesirables have been blocked, watch the Kerio activity indicated by a red/green arrow spawning across the blue Kerio shield on the right of your taskbar. It's clobbering the 'nasties' and permitting all the 'goodies', AND tells you when someone - or something - is trying to hack into your system. Nice stuff, very satisfying and the software was FREE. Readers won't find a better deal.

Next, try 'right clicking' on the blue Kerio shield and select Firewall Status, and watch Kerio in action. Try the same procedure to open Kerio Administration and adjust the level of protection, and 'tweak' the settings if required.

The writer has often mentioned in this series that there are three levels of AR computer users: Those who...

1. MAKE it happen.
2. WATCH it happening.
3. WONDER what's happened.

You have now graduated level 1, so start feeling good about yourself from now onwards!

## Advanced Kerio Settings

For our power readers, open the Kerio icon again and select Kerio Administration then 'click' Advanced. A list of permissions can be studied in detail, and edited to change specific permissions, or delete a site having changed your mind. Some advanced knowledge of network protocol is needed to hack this file. However, if you look carefully, you'll see the processes involved when TCP/IP communicate

requests happen digitally on-line. It all makes sense with a little practice. Kerio also writes a logging file that shows every contact request, where it's come from, and the IP address of each site.

The results are, or can be staggering to see who's snooping into your computer. Kerio also logs the blocked requests so you can see who was blocked and why you blocked it. Advanced user can ping the offending site and find out who they are! Nasties stuff because you are now thinking like a hacker in your quest to protect your own interests. But that's what Computer Security is all about in today's uncertain world.

## AntiVirus Protection

Now we have got to the last of the essential three stages of protection. This topic was well covered in the April 2002 edition of Amateur Radio Magazine. If you missed it, dig it out and read it very carefully again - or ask for another copy - FREE via e-mail (1).

There are other AntiVirus software packages available on-line that are free to personal users like AVG (7). However, be cautious because there are numerous reports that AVG sometimes 'leaks' sending nasty viruses that can clobber your system. Be wise and spend some pocket money on the latest and well-respected Norton AntiVirus 2003 edition (4) (Less than A\$100).

## Summary

The writer regrets that this edition of Ham Shack Computers has not been more comprehensive. However, space is

limited in this publication but the essentials have been covered - enough for assertive RA's to get to grips with the right tools. Don't fiddle around, do what has been suggested, especially RA's, clubs, societies and business users alike. Remember that you won't be spreading spam and viruses from your newly configured system, AND the AR community will love you for it.

## Ham Tip No. 24.

In your spare time, hack the Kerio settings log file and note just who is trying to hack you!

Ham Shack Computers, Part 25 next month- Fed up with the cost of Office software? Save big money with a FREE 'OpenOffice.org Review' package.

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www.mailwasher.net

(3) Kerio Personal Firewall at:

www.kerio.com

(4) Norton Anti Virus 2003 at:

www.semantec.com

(5) "Internet Shields Up!" In. Australian Personal Computer Magazine. January 2003 p.42.

(6) "Why Holiday Hacking is Child's Play" In. Australian Personal Computer Magazine. December 2002. P.18.

(7) AVG Anti Virus Software at:

www.grisoft.com

73s de Alan, VK6PG

ar

## 420-430 MHz band Victoria

### Summary of Meeting held Tuesday 4 March

1. Ernie Hocking and Gilbert Hughes attended an ACA chaired meeting in Canberra with the Department of Defence and Victoria Government representative to be briefed on the proposal for a Victoria wide voice and data emergency services network in a significant portion of the 420 - 430 MHz band.
2. Due to this being the very early stages of the project, many of the details are presently undefined and subject to negotiation at this time.
3. The essence of the proposal is to secure spectrum for the following:
  - A communications system consisting of mobile voice and data system to support Police, Ambulance, Metro Fire Brigade, SES and CFA in support of Victorian Emergency Services.
  - A Victoria wide deployment (initial deployment will be in the greater Melbourne metro area)
  - The proposal will require access to significant portions of the 403-430 MHz band and will affect amateurs and other users of this spectrum.
- The system needs to be operational by the first quarter of 2005, in time for the 2006 Commonwealth Games.
4. More detailed discussion of the impact on the amateur radio service is planned for the April WIA Federal Convention

Further information on developments will be provided on the WIA web site and AR as soon as it becomes available.

Ernest Hocking, WIA Federal President  
Gilbert Hughes, WIA/ACA Liaison Committee  
3 March 2003





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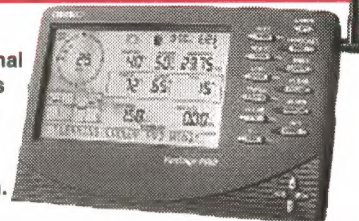
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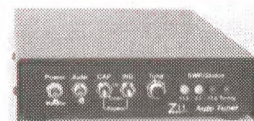
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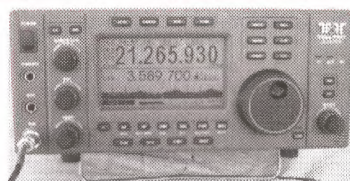
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# How to construct a very small but efficient Antenna with PVC Plumbing tube and discarded fruit cans.

## 20-40 metre EH antennas

By Lloyd Butler VK5BR

There has been some revolutionary thinking on how Electromagnetic Waves can be generated. One outcome of that thinking in small efficient antennas is the tubular dipole which has been named the EH antenna. Here we describe typical antenna assemblies made up for 20 and 40 metres.

### 40 metre Dipole

An excellent way to start on the EH Antenna would be to just read the material by Ted Hart (W5QJR) on web site <http://www.eh-antenna.com>. However not everybody has access to the Internet and I will give a very short precis of how Ted introduces his subject.

It is some 120 years since Heinrich Hertz discovered that radio waves were periodic. For the last century our concept of the basic antenna has been a resonant half wave with other antennas being subsets of the basic Hertzian antenna.

Also about 120 years ago John Henry Poynton discovered the components of radiation which are in brief:

- (1) There is an Electric (E) field and a Magnetic (H) field which must occur in the same space, be at right angles to each other and be in time phase.
- (2) The relationship between the E field in volts/metre and the H field in amp-turns/metre is equal to 377 ohms, the impedance of space.

*Just the thing to  
fit in a small  
space like an  
attic*

To enable radiation, the E and H fields must be developed which satisfy these requirements. We learn that the E field in a resonant Hertzian half wave antenna is developed from the ends of the antenna where the voltage is greatest and the H field is developed essentially in the centre where the current is greatest. Apparently the correct relationships between the E and H fields don't occur until around a third of a wavelength distance from the antenna where the fields are becoming weaker. So perhaps there is a better way!

We have gone along with the basic Hertzian antenna for a century. However in the 1980's, Scottish Professor Maurice Hately (GM3HAT) correctly concluded that we didn't need a large resonant antenna and radiation could be achieved by creating the fields in the correct relationship from correctly phased untuned field generating elements. As a result, Professor Hately, together with several associates, introduced (and in fact patented) various forms of the Crossed Field Antenna which were designed to generate the E and H fields at right angles, in phase and in the same (and comparatively small) space. Hence the name Crossed Field Antenna (CFA).

Some of us will remember Ted Hart (W5QJR) who developed comprehensive formulae for the design of the Magnetic Transmitting Loop. Ted eventually became involved with documentation for the Crossed Field antenna and went on to develop what he has called (and patented) the EH antenna.

So, I had a go at assembling versions of this antenna, one each for 20 and 40 metres. The article is about how I assembled them and how they performed.

### Constructing an EH Antenna

The antenna consists of two tubular (or conical) plates with natural capacity between them. You might consider them to be a fat dipole (or fat bi-cone). The E field is generated by voltage across the plates and the H field by the displacement current in the dielectric between the two elements. The fields intersecting at right angles are shown in Fig 1.

What I have assembled is two samples of this antenna based on some construction ideas by Stefano (Steve) Galastri (IK5IIR) which can be found on the web site I have mentioned. Steve formed the dipole by wrapping sheets of copper around PVC plumbing tube. For my antenna, I selected plumbing tube which nicely fitted around recycled

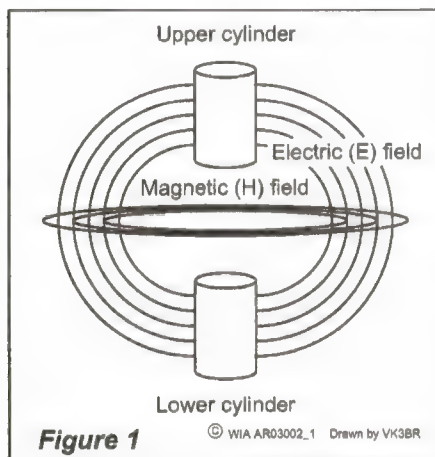


Figure 1

© WIA AR03002\_1 Drawn by VK5BR

Fig 1. Fields generated between the two cylinders



Photo 1. VK5BR  
40 metre EH  
Dipole Antenna.



Photo 2. VK5BR  
20 metre EH  
Dipole Antenna.



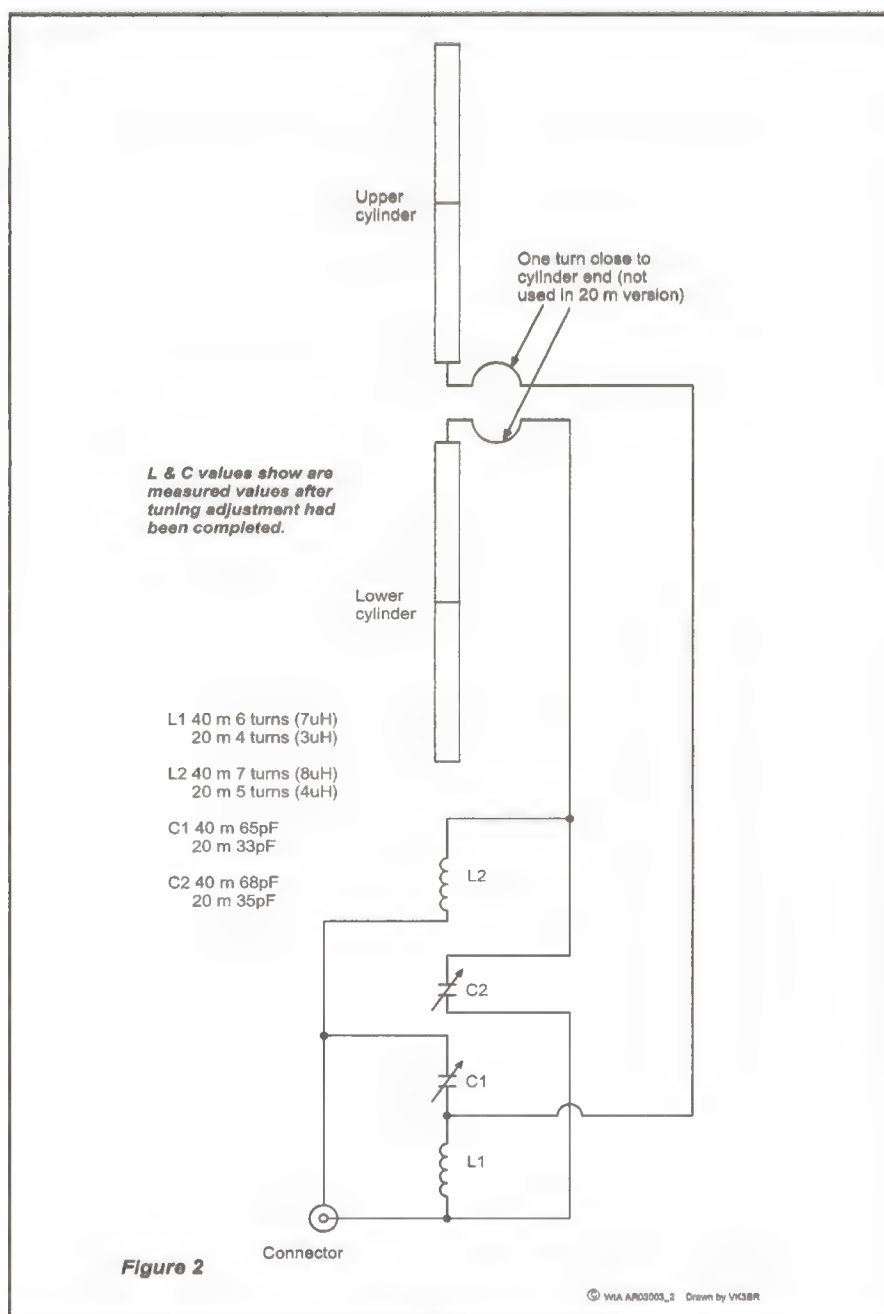


Fig 2. Circuit Diagram of EH Antenna.

metal fruit containers which I had saved. So my tubular elements are on the inside of the tube instead of the outside.

For a standard EH design, the Radiation Resistance ( $R_L$ ) is given as equal to  $2 \pi \times 377 = 2368$  ohms. An external matching network is required to transformation from 50 ohms unbalanced line to the balanced input of the dipole with 2368 ohms radiation resistance. A balanced form of L network is used with two inductors and two capacitors. It is an easy matter to calculate the value of these components as each must have a reactance equal to

the square root of  $(50 \times R_L)$  which equals 344 ohms. Adjustment of the network apparently also ensures that the displacement current is in phase with the voltage across the plates so that the E and H fields are in phase. From my experiments, the phase correction is so small that it is difficult to notice the deviation from the calculated values I have just quoted.

At this point I must draw attention to the fact that in Australia our standard measurement units are metric. However all the data I have referenced is in imperial units. To avoid any confusion,

both to myself and others reading this article in conjunction with the web site, I have purposely kept to the imperial system.

The circuit diagram for my two units is shown in Fig 2. I first assembled the 40 metre unit as shown in Fig 3. For each cylinder (half dipole) I used two of our standard Australian fruit containers (fruit tins or fruit cans) which are 4 inches in diameter and 4.5 inches deep. The inside diameter of the PVC pipe I obtained was just a little over 4 inches, so the cans fitted in nicely. The cans were secured by self tapping screws which also doubled as connecting terminals where required. The can pairs were connected together by three straps on the outside of the tube.

I followed closely Steve's arrangement for fitting a matching network. For the capacitor stators, I fitted cut down sections of more cans fitted inside the tube. For the adjustable sliders on the outside of the tube, I used further pieces of the tinned cans which are held in place by strong rubber bands. This allows them to be slid up and down to vary the capacitance made up by the two plates with the PVC tube as dielectric. If required, these can be glued in place later after adjustment is finalised.

The lower inductor L1 has one less turn than the upper inductor L2. On testing, I found this needed slightly less inductance which I reasoned was probably due to the extra inductance of the very long lead between L1 and the top cylinder.

### Cylinder dimensions

According to the reference, cylinder diameter is not too important and my own tests seemed to confirm this. However, the ratio of cylinder length to diameter does control the radiation beam width. A low ratio gives a spread pattern more suitable for local contacts whereas a higher ratio narrows the beam and gives a lower angle of radiation, more suitable for long distance (DX) communication. They say, typical ratios could vary from as low as 1.5 to an optimum figure of 3.14 for DX work.

My ratios are somewhat set by the can dimensions. For the 40 metre unit, the ratio is 2.4. Using this ratio, local reports consistently gave my signal as two S points below my half wave end fed inverted V antenna. At longer distances the difference was considerably greater. For the 20 meter unit, I tried to get the



ratio a bit greater (again somewhat controlled by can sizes). For this unit the ratio is 2.85 and this works much better for distant stations.

For 20 metre, the reference suggested 2 inch diameter cylinders. I only had cans just under 3 inches diameter, so my cylinders for 20 metre are a little larger than suggested.

## 20 metres

The assembly of the 20 metre unit is shown in Fig 4. The arrangement is much the same as the 40 metre unit except that it is assembled with 3 inch diameter PVC plumbing tube which nicely takes another Australian standard fruit can which is just less than 3 inches in diameter. The can pairs are also a bit different. In the forty metre unit, I fixed each can in place separately and bonded them together. In the 20 metre unit I lapped ends of a pair, soldered them together and used only one set of screws to secure the pair in place.

Once again with the 20 metre unit, I found the matching balanced better with slightly less inductance in L1.

## Isolation Coils

Not mentioned previously are two coils of a single turn shown on the 40 metre unit, one mounted just below the top cylinder and one mounted just above the bottom cylinder. According to the web references, this introduces a small amount of phase shift which reduces radiation from the connecting wires inside the tube and actually increases the radiation from the cylinders. Steve says that spacing between the winding and the cylinder edge is critical but I don't know why.

Anyway I have spaced my coils at 0.25 inch from the edge.

I have not included these isolation coils in the 20 metre unit but I might later add them to see if I can notice any change in performance.

## Matching adjustment

The setting of L and C in the matching section is quite critical. Set the transmitter up on the centre frequency of the band with the transmitter set for about 10 watts output and look for low SWR. With the inductors, I put on more turns than I had calculated using Wheeler's formula and took off a turn at a time adjusting to the extremities of C1 and C2 each time. I close wound the coils but inductance can be reduced by

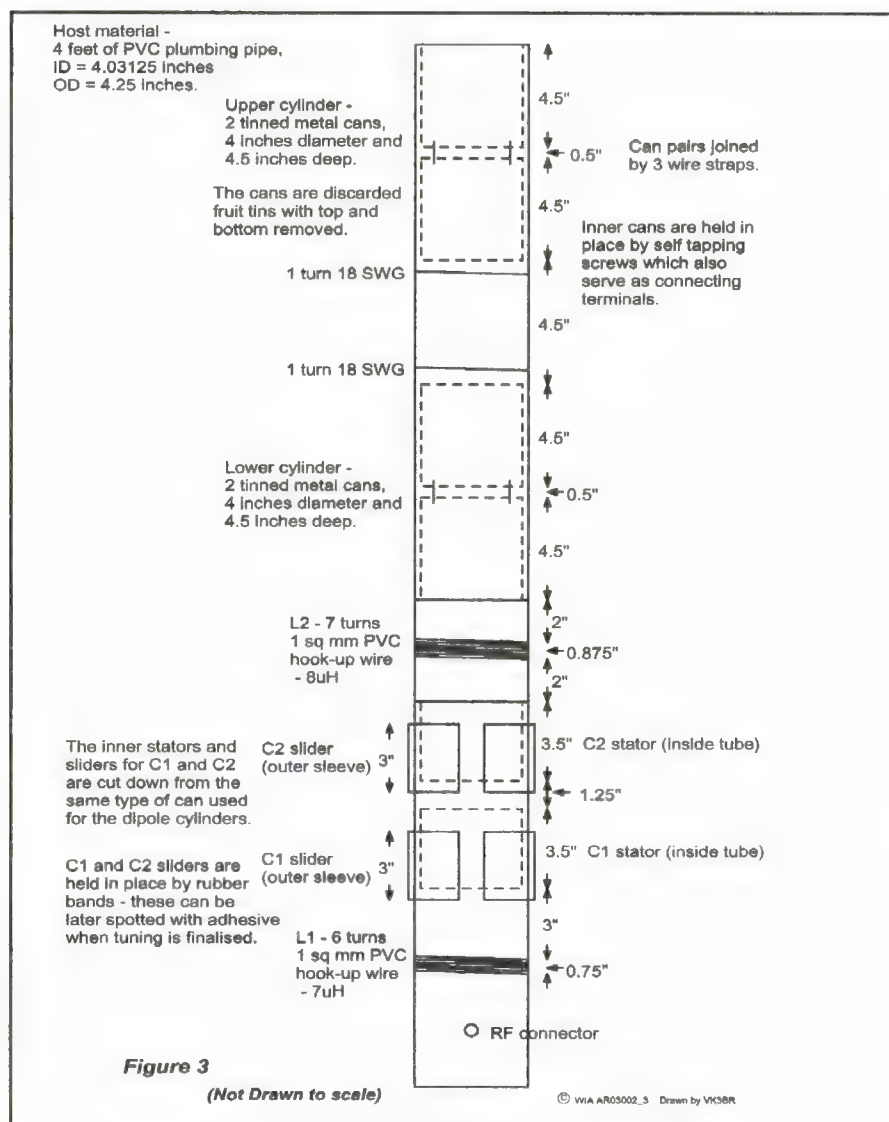


Fig 3. 40 Metre EH Antenna Assembly.

## Some Air Tests

To test the unit on the air, I made comparisons with an end fed Inverted V antenna which is a half wavelength long on 40 metres. On 20 metres it is a full wave long and operates, no doubt, with a rather complex arrangement of radiation lobes.

In general, on receiving with the antenna about a metre above the ground, both antennas produced signals several S points below the inverted V although I did find an occasional signal on 20 metres which appeared comparable with the inverted V. The receive level of the 20 metre antenna improved considerably when I raised the antenna to around 3 metres above the ground.

On transmitting on 40 metres to stations in the local Adelaide metropolitan area, reports gave the

pushing the turns apart. When the adjustment gets close, the reflected power will drop and SWR will run right down rather suddenly close to 1:1 when the right adjustment is found. When adjusted, I found I could light up a small BC fluorescent lamp from the field around the dipole with less than 15 watts. Low SWR also corresponds to maximum field strength as measured on a meter some distance away.

After alignment I disconnected leads from the inductors and capacitors and measured their values. The measured inductance and capacitance values are recorded on the circuit diagram (figure 2) and are very close to values calculated from reactance using the formula quoted earlier with the assumed radiation resistance of 2368 ohms.



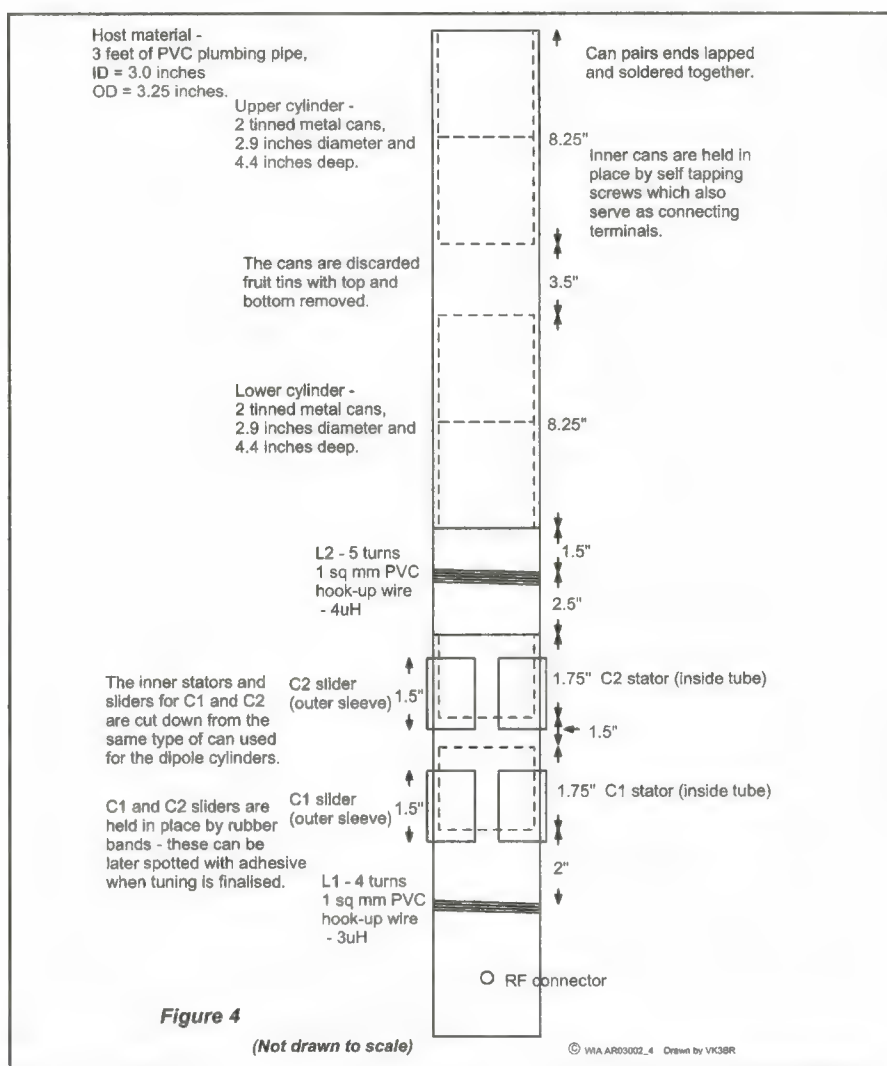


Fig 4. 20 Metre EH Antenna Assembly.

signal down around two S points on the inverted V. It was down a bit further on distant stations. On the other hand, it seemed to work better than a random length of wire strung up to the nearest tree and tuned up with a Z Match.

On transmitting on 20 metres some 1500 km to the east coast of Australia, the EH dipole was just barely below the inverted V. This is quite impressive considering the dipole element is just 20 inches (half a metre) long and a fraction of the length of the 20 metre full wave inverted V.

## Weather Proofing

My antennas, constructed as experimental units, are not made to withstand the elements without some form of protection or weather proofing. Without protection, the tin plate on the fruit cans would soon deteriorate and the cans would corrode. I could also envisage the many birds we have finding the

hollow tube great to build a nest. The hollow tube would also be a great haven for spiders. Imagine having cooked spider as part of the dielectric between the two cylinders. However, the antenna would be fine if fitted under the tiles in the roof cavity or some other protected area.

## Conclusions and Comments

The concept of the basic antenna has certainly changed. The fact that long distance communication can be carried out with such a small sized antenna is quite revolutionary. However if you have the space for a full sized antenna and you have one installed, I wouldn't dismantle it. From my tests, the full sized dipole (and complements of it) still works better. However if you live in a housing unit with limited yard space, one of these could be the way to go. Of course it could be that my assembled example of the EH

antenna might not be an optimum design. For example, for the radiating cylinders, I have made use of discarded fruit cans which are tin plated steel. More expensive copper sheet or copper tube would have lower surface resistivity although with such a high radiation resistance I wonder if this would make much difference. However there is one thing that I wondered about. The steel is a ferro-magnetic material and I wondered if its magnetic properties might in some way distort the desired magnetic field and alter the properties of the antenna.

Comparisons of performance with the magnetic transmitting loop have been made. I felt I had better signal reports on 20 metres from my one metre square magnetic loop. However the magnetic loop has extremely high Q and it has to be continuously retuned to traverse the frequency band. The EH antenna can be tuned up at the centre of the band and operated across the band without retuning. I found that it is possible to tune up with close to 1:1 SWR in the centre of the band and hold within 1.5:1 over the whole band.

Another point of comparison is the physical size. It's not so apparent for the smaller magnetic loop on 20 metres but an efficient magnetic loop on 40 metres might need 10 metres (or around 33 ft) of copper pipe in the loop circumference. Compare this to the dimension of the radiating element of the 40 metre EH dipole described.

A further feature of the EH antenna is its small capture area for noise pick-up. It is a very quiet antenna for pick-up of noise.

The hertzian concept for antennas has been with us for a long time. But now we are introduced to a new exciting concept and a new avenue for experimentation, all based on electromagnetic wave theory discovered by John Henry Poynton 120 years ago.

## References

1. The EH Antenna Book by Ted Hart W5QJR - <http://www.eh-antenna.com> (There are also other relevant articles on the eh site)
2. Full Network 20 Metre Antenna - <http://www.qsl.net/w0kph/fullnet.htm>
3. How to build and tune your EH Ham Antenna by Stefano Galastri IK5IIR <http://www.eh-antenna.com>



# Amateur radio and the challenge of change

by Jim Linton VK3PC and Roger Harrison VK2ZRH

**Amateur radio in Australia is in decline and must change. Changes in technology and society have created the challenges amateur radio faces today. The authors propose changes to the Australian amateur radio examination and licensing system to meet those challenges. The authors previously tackled these issues with a discussion paper in 1985. This is the "Linton-Harrison Paper 2003."**

Amateur radio in Australia has reached a watershed. The number of radio amateurs is clearly in decline. Interest in the hobby is declining. There are fewer new amateur licensees each year than the total of those radio amateurs who die and those who do not renew their licences. This has been the situation for at least the past five or six years.

The number of candidates sitting licence examinations has been declining since the mid-1990s.

The downturn in exam candidate numbers would be far worse were it not for a steady number of already-licensed radio amateurs upgrading. The number of amateur exam invigilators has also declined significantly since the mid-1990s.

What the radio amateur community in Australia needs is **sustainable** growth. That means encouraging people into the hobby who retain their licences and their interest in amateur radio, rather than getting a licence in a flurry of interest only to give it up or let it lapse some years later because they find there is not enough in the hobby that continues to interest, challenge or reward them.

We are not saying something new here. Generally, the Australian radio amateur community already has some sense of the decline. The recent response has been a debate in the local radio amateur community over making entry to the hobby easier.

Australia is not alone in experiencing a decline in the numbers of radio amateurs. Britain, Canada, Germany,

Japan, New Zealand and the United States are all experiencing declining radio amateur numbers. The local debate on easier entry has been stimulated by the UK's response, where the *Foundation Licence* was introduced at the beginning of 2002. A motion debated at the 2002 WIA Federal Convention sought the introduction of a similar licence in Australia. That motion was defeated, but the debate among radio amateurs in Australia has intensified over the past year. The 2003 WIA

Federal Convention will debate another motion on an entry level licence for Australia. Irrespective of the outcome, debate will continue on the future direction of amateur radio in Australia.

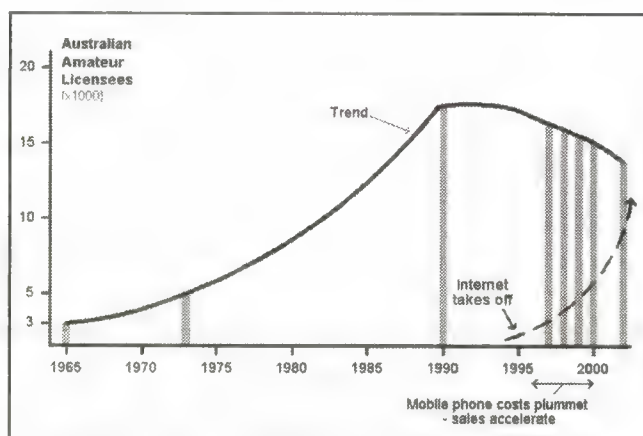
Before we look into the issues that face Australian amateur radio today and examine a path forward, it is appropriate to outline a little history.

## Some background

The number of individual amateur licensees in Australia peaked around 1990 at approximately 17,500. Callbooks

of the era cite greater numbers of callsigns, but club, beacon and repeater licences have to be subtracted, along with those individuals who held multiple callsigns. Figure 1 illustrates the general growth of amateur licensees in Australia from the mid-1960s through to 1990. Numbers plateaued during the early 1990s then began to decline. That decline has accelerated in recent years.

Many radio amateurs who have been licensed for 25 years or more (the authors included) will recall the "CB boom" years from roughly 1975 through the early 1980s. That boom in CB radio brought an influx of new radio amateurs into the hobby from people whose interest in radio communications was aroused by their experiences on the air. The comparative freedom and scope available in amateur radio attracted them. But few took up the hobby until



**Figure 1.** Australian amateur licensee numbers from 1965 through 2002. Having hit a peak of approximately 17,500 in 1990, numbers then levelled-off over the early 1990s before declining – a decline that has increased since the year 2000. Has rapid growth in the Internet and mobile phones had an influence? (Figures from WIA, government and other sources).



an "entry level" licence to suit their needs and backgrounds was brought in – the Novice licence. It was introduced by the Post and Telecommunications Department in 1976 as a measure to provide an alternative outlet for the growing ranks of unlicensed operators using 27 MHz CB equipment. A few thousand pirates in 1974-75 had swelled to tens of thousands by late 1976.

By the time the P&T introduced CB licensing in mid-1977, a \$20 licence fee did not deter hundreds of thousands taking out the over-the-counter licence to use 27 MHz and 477 MHz

equipment. At \$6, the Novice amateur licence in 1977 was cheaper than a CB licence at \$20, but then piracy was prevalent, particularly above and below the 27 MHz CB band. No licence, lots of fun to be had and the risks were considered to be low. Nevertheless, over the boom years of the late-1970s through early-1980s, many CBers joined the radio amateur ranks. The range of things to do and the relative freedom to pursue interest in a wide range of radio communication technologies and activities had considerable appeal. The influx from CBers built a solid base for

growth over the next decade and half, just as the introduction of the Limited licence in the 1950s contributed to growth over the 1950s and 60s. Without those factors, where would the growth curve of Australian radio amateurs have reached at its peak – 5000 perhaps?

Worldwide, growth in the number of licensed radio amateurs has stalled, as can be seen from Figure 2. In the developed nations having large numbers of radio amateurs – the USA, Japan, Canada, United Kingdom, Germany etc – the pattern of decline over the late 1990s is repeated, as revealed

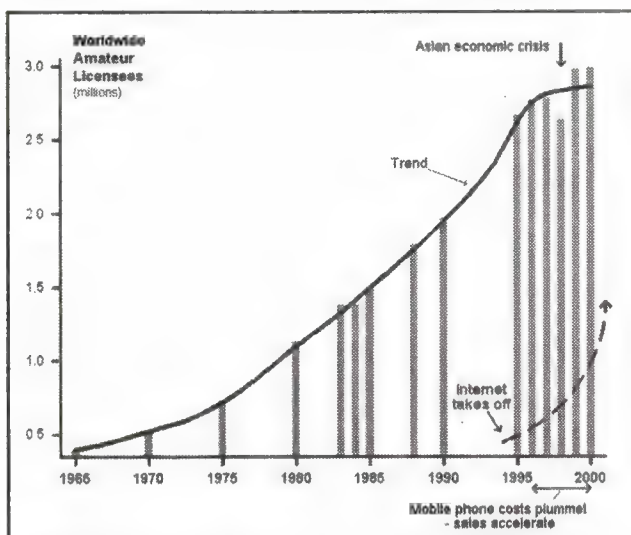
in data collected by the International Amateur Radio Union (IARU). Japan's radio amateurs have declined from a peak of two million to about 1.3 million.

From the mid-1990s, the rate of growth worldwide began to slow. In Australia, licensee numbers had already reached a plateau. It is the growing radio amateur communities in the rapidly developing nations, such as Thailand and Chinese Taipei, and the recently independent nations in eastern Europe, the Ukraine for example, that has balanced the declines elsewhere over the late-1990s. Indeed, given that our latest figures are

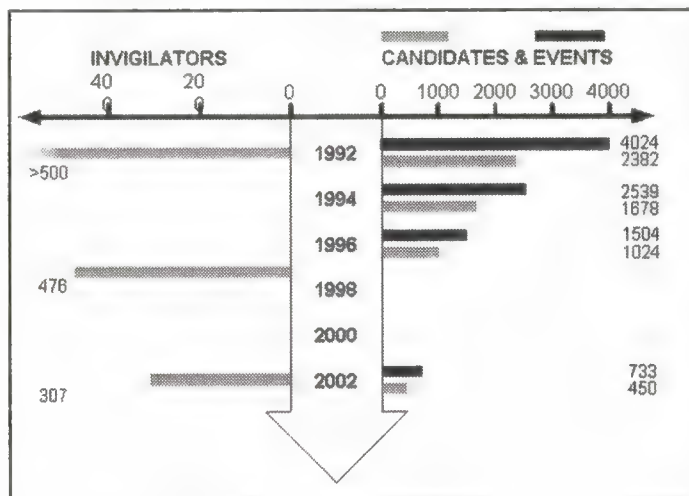
for the year 2000, the number of radio amateurs worldwide may now be falling.

The dip in licensee numbers in 1998 is curious. The authors note that it coincides with the 1998 Asian economic crisis, but may not be related, given the swift recovery. The fall in numbers may simply be an aberration in licensee numbers reported to the IARU. The authors note that licensee data assembled by the IARU has some anomalies. However, the overall trends are readily discerned.

In Australia, other evidence of declining interest in amateur radio is revealed in data from the amateur examination service run by the WIA. Previously conducted by the government licensing authority, examinations for amateur operator certificates of proficiency were devolved to the WIA in 1991, just as the number of radio amateurs peaked. The number of exam invigilators accredited when this system began exceeded 500. The number of invigilators has now almost halved, falling to 307 last year. In 1992, more than 2300 exam events were held, with more than 4000 candidates attending. Here, an 'exam event' is an occasion on which an examination is held. It may be several persons sitting for multiple segments, or it may be one person sitting for one segment. An exam segment may be regulations, theory,



**Figure 2.** Worldwide amateur licensee numbers from 1965 through 2000. The dip in 1998 is a curious artefact. It may be related to the 1998 Asian economic crisis or some aberration in amateur licensee numbers reported. Again, the question arises – has rapid growth in the Internet and mobile phones had an influence? (Figures from the International Amateur Radio Union).



**Figure 3.** The decline in interest in amateur radio in Australia is well-illustrated here. Amateur exams were devolved to the WIA in 1991, coinciding with the peak in amateur licensee numbers. At the outset of the new exam service, invigilators numbered more than 500 and there were strong levels of exam events and candidates sitting. All have declined over the decade since. The numbers of candidates and events have fallen to less than a fifth of 1992 levels. Invigilator numbers have almost halved – most likely as a result of falling demand for exams.



Morse sending or Morse receiving. A 'candidate' means one person for one exam segment. By 2002, the number of exam events and number of candidates had collapsed to **less than one-fifth** the numbers of a decade earlier.

It is clear that the Novice Limited licence introduced in 1996 has not engendered revitalised interest in amateur radio. It's just another slice of 'the same old thing'. This is not to decry those who have leapt in and gained their Novice Limited licence. Every new recruit is to be applauded. It must be said that a proportion (maybe a sizable proportion) of candidates sitting for exam events over the past six years have been existing licensees 'upgrading'.

The numbers tell the story of Australian amateur radio's decline. Licensee, exam candidate and invigilator numbers are declining. The numbers provided here are not "statistics" – that is, mathematically manipulated quantities. Any further analysis would be merely discussing the tatters on the deckchairs of the Titanic.

Another problem – decline begets decline. With fewer amateurs each year, and very few newcomers getting on the air at every opportunity with their infectious enthusiasm, there is less activity. It has become noticeable in many small ways, across many bands and spheres of activity. It is not, perhaps, universal but nevertheless a noticeable thing. Less activity results in existing radio amateurs finding amateur radio less interesting, and their activity drops off too. It has in recent years led some to exit the hobby and cancel their licences. Hands-up surveys at radio clubs to the question "who has been on air in the past week" find the majority not putting up their hands.

The corollary is – activity begets activity. The revitalisation of interest in weak-signal and long distance working on the VHF and UHF bands in recent years has come about through the rapidly growing use of digital signal processing modes such as FSK441, JT44 and the like, together with the pursuit of working 'grid squares' (small geographic areas). Modestly equipped stations can achieve results via troposcatter, aircraft enhancement, meteor scatter and moonbounce that were undreamed of a decade ago. Perhaps this example provides an inkling of a way forward.

## Influences

Japan has had a no-code entry level licence ("fourth class") for decades. Japan became the nation with the greatest amateur population in the world – two million in a population of some 130 million, and twice the number of radio amateurs throughout the rest of the world. Since the mid-1990s they've lost some 700,000 radio amateurs. In a recent interview in CQ magazine, the president and founder of equipment manufacturer Icom, Tokuzo Inoue JA3FA, commented that he thought much of the loss was due to young people's use of the Internet and cellphones.

There is no doubt that the rapid rise of the Internet and the proliferation of cheap mobile phones has coincided with the downturn in amateur licensees in the developed nations. This was preceded by a booming interest in personal computers from the early 1980s that continues today.

Today's 20-somethings and teenagers have never known a time when there weren't personal computers around. There is plenty of anecdotal evidence that PC hobbyists who discovered amateur radio fuelled sustained growth in amateur radio after the CB boom waned.

More recently, the ready availability and ever-falling cost of Class-licensed wireless LAN technology operating on the 2.4 GHz industrial-scientific-medical (ISM) band has sparked a boom in 'amateur' wireless networking. Amateur radio shares this band with all other users. Across the world, computer hobbyists have exploited this '802.11 WLAN' equipment – intended for in-home or across-the-office networking without cables – establishing neighbourhood wireless networks for file-swapping, 'free' Internet access (via some kind soul's broadband connection), PC-to-PC chit-chat and the like. While it seems rather like amateur packet radio technology, these 802.11 wireless LANs push data around at speeds of 2 Mbits/sec up to 11 Mbits/sec, not the 1200 baud or 9600 baud of amateur packet radio.

These wireless network enthusiasts have embarked on solving the technical and logistics challenges involved in

extending the 2.4 GHz signals way beyond their property boundaries to create hub-and-spoke or point-to-multipoint networks. Strong parallels with amateur radio are readily recognised. To quote from the weblog (online diary) of Aaron Swartz ([www.aaronsw.com/weblog/000842](http://www.aaronsw.com/weblog/000842)), who lives in San Francisco, in a piece titled "The Wireless Future", he says: "... the (WLAN) boxes are getting stronger too, able to push bits for farther distances. They're cheap and popular enough that all of San Francisco is covered by a forest of overlapping wireless. It's time to unify them. The next software upgrade turns this collection of hub-and-spoke networks into one large mesh, letting packets bounce from one base station to another, perhaps stopping at a few laptops in between."

Aaron is 16 years old. He's no newbie. He's a member of the World Wide Web

**Consortium's Resource Description Committee**  
([www.w3c.org/RDF/](http://www.w3c.org/RDF/)) and in 1999 won a prize for excellence in building non-commercial websites. Is he a

**decline begets decline...  
the question "who has  
been on air in the past  
week" find the majority  
not putting up their hands.**

visionary, or a revolutionary?

Wireless LAN hobbyists in state capitals around Australia are carving out a similar vision (see <http://melbourne.wireless.org.au>, [www.sydneywireless.com](http://www.sydneywireless.com) and [www.x.net.au/coverage.html](http://www.x.net.au/coverage.html)). Last year, these local WLAN hobbyists won dispensation from the government from having to take out telecommunications Carrier licences (at \$10,000) that otherwise regulated their activities.

But there may be other factors at work. Since the early 1990s in Australia, educators, scientists, engineers and industrialists have commented on the declining interest in and understanding of science and technology in Australia, particularly among school students. This was identified by research carried out over 1994 and highlighted in a report prepared for the Department of Industry, Science and Technology (DIST), titled "Strategy Development Study – An evaluation of Changes in the Understanding of Attitudes to Science and Technology" (Woolcott Research Pty Ltd).



# G. & C. COMMUNICATIONS

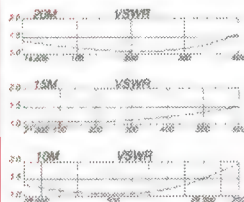
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Published in January 1995, the report drew two telling conclusions: "The community at large has a very poor and confused understanding of what science and technology really are," and "Students continue to regard science based careers as risky." The latter comment was repeated in the media earlier this year in commentary on competition for places in university courses – demand is high for law, medicine and commerce, and low for science and engineering.

Commentators felt that the "tech-wreck" of 2001-2002 had influenced this trend because of the sharp decline in available jobs. But the difference in demand between law/medicine/commerce and science/engineering existed before the high-tech boom of the late-1990s. It would seem the DIST research findings have prevailed right through the 1990s.

## Challenges ahead

From the decline in amateur licensees and our rapidly ageing population, the future does not look too bright. It is clear that either the hobby is becoming irrelevant to people with an interest in radio communication or the 'entry barrier' – the licence and exam system – has become irrelevant.

The authors contend that the licensing system and the syllabuses behind the examinations have become irrelevant because they are well behind the times. Indeed, the whole philosophy is rooted in the 19th century, arising from the system instituted to train and accredit industrial craftsmen and tradesmen – boilermakers, electrical tradesmen and plumbers, etc.

The whole licensing structure, the examination system and syllabuses need a fundamental rethink. As it stands, it smacks of bureaucratic paternalism to today's potential radio amateur – of any age. The issue is no longer just about providing an entry level licence, something easier to gain than the present Novice or Novice Limited licences on which current debate among Australian radio amateurs centres.

As noted earlier, Japan's no-code entry level licence did not stem the loss over recent years of some 700,000 amateurs out of two million. Why? Because,

despite a basic syllabus and a simple exam, Japan's Fourth Grade licence offers severely limited licence conditions that hold little attraction to people in their society today who have an interest in radio communication. Licences in Japan cost 500 Yen, about \$7, so the licence fee is no barrier.

Likewise with our Novice Limited. The 'entry barrier' is little different to the Novice licence, but the licence conditions in terms of spectrum access and available transmission modes limit significantly the variety of available activities in which the Novice Limited licensee can participate – and the variety and number of other radio amateurs they can contact.

The Australian amateur community must face the question of whether it is relevant any longer that candidates for an amateur licence need to spend up to 40 weeks in part-time study to cover the AOCP exam syllabus, somewhat less (but still tens of weeks) for the NAOCP ("cram courses" notwithstanding). Conditions prevailing in society today must be taken into account in any consideration of changing the amateur licensing and exams system.

Most of us enjoy a high standard of living, but are time poor. In the early-1980s, when people in full-time employment worked on average 228 days a year (about 46 working weeks) and enjoyed 137 days of leisure, social researchers forecast that by the year 2000 it would be almost the other way around. Full-time workers in 2000 would spend 148 days at work (about 30 working weeks) and have 217 days leisure during a year ("The Year 2000", Kahn and Weiner, 1983). Yeah, right. That didn't happen. Many part-time workers today spend 140 or more days at work in a year. Many full-time workers are spending 240 or more days at work. Holidays are more often taken as short breaks, rather than several weeks, as was the norm 20 and more years ago. The 'standard' working week may be 38

hours, but a high proportion of workers spend 50 or more hours a week at work. That's not to mention work taken home, to be done outside office hours.

Young people in Australia doing full-time tertiary studies are knowledge rich, time limited and cash poor. If they're employed and doing tertiary studies, they're knowledge rich, cash limited and time poor. In the majority of households, both partners of a couple work – both full-time in many households, or one full- and the other part-time in a proportion of households. They're knowledge rich, often cash constrained (high mortgages, high rents) and time poor. In the case of retirees, whether self-funded or not, they're frequently time rich and generally cash constrained.

Pretty much all of the sophisticated technology that is part of our everyday lives is used on a 'plug-and-play' basis – mobile phones, microwave ovens, DVD players, personal computers, even cars. The technology is taken for granted. No interest in science or technology is needed to cope with it, only an interest in what it can do. It's designed that way. But when some individuals or small groups see further possibilities for a technology, where its purpose can be extended to new and different roles, they are enthused by the challenge presented. This is what's driving the wireless LAN enthusiasts. It's what motivated the pioneers of shortwave amateur radio in the 1920s and 30s, packet radio enthusiasts of the 1970s and 80s, and so on.

It is essential that a new system of examination for amateur licences must take into account our prevailing social conditions.

In addition, as most amateurs are already aware, the International Telecommunication Union's (ITU) World Radiocommunication

Conference this year (WRC2003) will likely adopt a resolution that removes Morse code proficiency as a requirement for amateur licences that provide access to bands below 30 MHz. If adopted, it will then be up to administrations in each country whether they retain Morse code testing or not. Many countries around the world have indicated they

### **The whole licensing structure, the examination system and syllabuses need a fundamental rethink.**

### **The Australian amateur community must face the question of whether it is relevant any longer that candidates for an amateur licence need to spend up to 40 weeks in part-time study to cover the AOCP exam syllabus**



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Andy VK3IV

will drop Morse code testing and have adopted testing at 5wpm as an interim measure.

In August 2001, the ITU adopted this Recommendation on amateur qualifications:

*In consideration that certain minimum operational and technical qualifications are necessary for the proper operation of an amateur or amateur-satellite station, any person seeking an amateur license should demonstrate theoretical knowledge of specific topics in the areas of:*

- radio regulations,
- methods of radiocommunication,
- radio system theory,
- radio emission safety,
- electromagnetic compatibility, and
- avoidance and resolution of radio frequency interference.

Last year, David Sumner K1ZZ, Secretary of the IARU said, "The International Radio Regulations have long required that administrations take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate an amateur station. In anticipation of changes that are likely to be made in the amateur and amateur-satellite service regulations at the next World Radiocommunication Conference (WRC2003), the new Recommendation provides additional definition to these qualifications without reducing the prerogative of an administration to set its own standards."

So, the climate and conditions for change have already been set. And they apply globally.

### The way ahead

Time to put a proposition on the table, examine the pros and cons and likely concerns. To meet the challenges and issues outlined, the authors propose that a future licensing system comprise the following:

- An Unrestricted licence, with all the licence conditions of the existing AOC; and
- An Entry Level licence, with

licence conditions appropriate to the licensee's understanding of radio system technologies and operations, without unduly restricting the opportunity to learn by experience and experiment.

We believe there must be a new syllabus, and thus a new exam system, devised for each.

The Australian radio amateur community must ask the question: Is the AOC suit to the third millenium, or more aligned to the views of the 1950s or 70s? Likewise for the NAOCP syllabus: Is it suited to today and the future, or a relic of the late-1970s and 80s? See for yourself and compare them against the ITU's Recommendation of 2001. Download the AOC and LAOC syllabuses from:

- [www.aca.gov.au/publications/info/amatexam\\_attach1.htm](http://www.aca.gov.au/publications/info/amatexam_attach1.htm), and
- [www.aca.gov.au/publications/info/amatexam\\_attach2.htm](http://www.aca.gov.au/publications/info/amatexam_attach2.htm).

Each syllabus has been subject to "scope creep" over time, such that they are bloated well beyond the technical and operational basics needed as a

**If potential radio amateur candidates are voting with their feet, it is our contention that the AOC and NAOCP syllabuses are no longer relevant.**

foundation to ensure essential understanding of elementary electronics and radio communication systems. The AOC syllabus comprises a schedule of almost 800 items in 15 topics, while the NAOCP syllabus schedule is almost 300 items under 15 topics. Each syllabus covers many detailed specifics of a narrow range of radiocommunication systems and related electronics technologies.

If potential radio amateur candidates are voting with their feet, it is our contention that the AOC and NAOCP syllabuses are no longer relevant. Hence, new ones have to be developed. Their structure and scope must align with the ITU Recommendation of August 2001. That's what the Australian Communications Authority (ACA) will look to for guidance to comply with international requirements.

As appropriate knowledge of regulations and operating practices are necessarily common to each proposed licence, the authors suggest that there



be a single syllabus for regulations. It is administratively simple. The present regulations syllabus could be retained; the authors suggest adding a basic knowledge of radio emission safety (EMR) standards. It is taken as 'given' that radio amateurs must know the basics of how to be – and that they must be – “good neighbours” among other radio amateurs on the bands. This is about considerate operating practices, knowing common operating procedures and about knowledge of emergency operations. The present regulations requirements are on the ACA website at:

- [www.aca.gov.au/publications/info/amatexam.htm#Regs](http://www.aca.gov.au/publications/info/amatexam.htm#Regs).

In line with the world trend, examination in Morse proficiency is not included. It is understood that the ACA has already indicated their preference for a simplified licensing and examination system, without the necessity of testing Morse proficiency for access to bands below 30 MHz. This does not mean *abolishing* the use of Morse code by radio amateurs. It remains a valid transmission mode for radio systems, like any other – SSB, FM, TV, spread spectrum etc.

So, the new licensing and examination system would look like the diagram in the lower half of Figure 4, compared with the present system above it. The proposed syllabus topics are listed in the examination modules. They include the topics listed in the ITU Recommendation of 2001, mentioned earlier. Two topics have been added – electrical safety and some elementary electricity and electronics at differing levels for each.

Each licence in the proposed system stands alone. Candidates would not have to take the Entry Level licence before attempting to gain the Unrestricted licence. This differs from the UK Foundation Licence system. Similarly, a radio amateur would be able hold an Entry Level licence for life. If that satisfies them, it's their choice. The Entry Level licence should not be time-limited as was the Novice licence when it was first introduced. “Enforced upgrading” did not work. The idea smacks of bureaucratic paternalism.

The proposed system has the virtue of simplicity, while ensuring appropriate competency.

The Entry Level licence should not be strictly an “operators’ licence” – a

simple permit to use a type-approved transceiver. It should afford the licensee two principal opportunities:

- to enjoy the thrill and satisfaction of operating a radiocommunication system under as many circumstances and conditions and on a wide variety of bands across the RF spectrum as they wish to explore; and
- to learn about radiocommunications as much as they wish to learn through their own effort, at their own pace, through experience and experiment within their competence, to satisfy their interests thereby.

This is in keeping with long-standing amateur radio tradition and with the ITU definition, which says amateur radio exists for the purpose of self-training, intercommunication and technical investigations. These two factors should best meet the expectations of people with an interest in radiocommunication who would be likely candidates for an amateur radio licence. These two factors, of course, apply equally in the case of the Unrestricted licence, only at a different level of expectation, knowledge and competence.

An operators-type licence restricted to commercial (or type-approved) equipment would have little appeal. Why sit for an exam when you can use a commercial off-the-shelf, no exam needed CB rig, a voice transceiver on the 434 MHz LPD band, or a bunch of WLAN transceivers? If a prospective radio amateur has to take out an Unrestricted licence in order to experiment at all, then it will be seen as an “enforced upgrade.” It is the prospect of having a wide range of possible activities to explore that is appealing, whether as an “operator” or experimenter – even if the basic knowledge required is elemental. Accommodating the interests of people in operating on the air, along with those interested in exploring the technological aspects of radiocommunications, maximises the breadth of appeal of the Entry Level licence. As a corollary, the Unrestricted licence should offer “more of the same.”

## Licence conditions

The Unrestricted licence in the proposed system would enjoy the same licence conditions as the present (Unrestricted) AOC.

Rather than being prescriptive on licence conditions for Entry Level licensees, the authors propose their licence conditions should generally provide:

- access to most amateur bands from 1.8 MHz through to 5.65 GHz
- all currently permitted transmission modes, and
- 100 watts (pX) transmitter output power maximum.

Long experience with the Novice licence has proved that there is little or no risk in them using 100 watts output power. In keeping with the previously outlined principle of not “unduly restricting the opportunity to learn by experience and experiment,” the authors have included wide access to frequency bands and transmission modes. If we are to attract a new generation of “experimenters” into the hobby through the Entry Level licence, then the authors believe the three points above are essential conditions in offering them a place to start. Note that the principal two

bands radio amateurs share with wireless LAN and other Class-licensed technologies – 2.4 GHz and 5.65 GHz – are included.

For those Entry Level licensees wanting to mostly pursue ‘operating on the air’, the proposed licence conditions are in keeping with the previously outlined principle of affording

**When you  
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they embody  
predominantly the  
amateur radio practices  
of the past**

them “the thrill and satisfaction of operating a radiocommunication system under . . . many circumstances and conditions and on a wide variety of bands.” The paltry range of licence conditions for the current Novice, and especially the Novice Limited, just don't cut it in today's world. See for yourself. Download the current Amateur Licence Conditions from the ACA website at:

- [www.aca.gov.au/legal/determin/lcd/amateur.pdf](http://www.aca.gov.au/legal/determin/lcd/amateur.pdf)

*Continued on page 20*



## Concerns

Are the syllabuses to be "dumbed-down"? This is an emotive term with an underlying assumption or belief that the current syllabuses are of a "high standard" or are the "proper benchmark." When you dispassionately analyse the current AOC and NAOCP syllabuses, it is readily apparent that they embody predominantly the amateur radio practices of the past and the technologies specific to them, rather than encompass fundamental concepts of radiocommunication and the systems that affect it.

It makes no sense to expect newcomers to amateur radio today to make themselves in the image of the past. Those who came into amateur radio via CB, or via computing, did not generally see themselves in the same mould as amateurs licensed earlier. Despite some 'social dislocation' at the time, new traditions were formed and accommodated along with those of long-standing. The hobby acquired more variety in activities, interests and technologies. It grew in diversity as well as numbers. A new licensing and exam system, if successful in attracting sustainable growth in newcomers, will do the same all over again.

Past thinking divided licence "grades" by successively restricting available frequency bands, transmission modes and power. The system preserved the privileges (ie. licence conditions) of those who'd previously gained higher licence grades and arguably offered an incentive to upgrade in order to access more frequency bands, more transmission modes and greater transmitter power. The authors realise this will be an issue with existing radio amateurs. No one likes to see their "hard-won" privileges seemingly undermined by newcomers apparently "getting it easy." However, when staring in the face of the decline that's under way, retreating to the past will likely make it terminal. Innovation is necessary to reverse it.

## Meeting the challenge

So far, the policy debate within the Wireless Institute of Australia has been focussed narrowly on what sort of "Foundation Licence" the WIA should lobby for. This is short sighted, as can be seen from the evidence presented. Certainly, the issue of an Entry Level

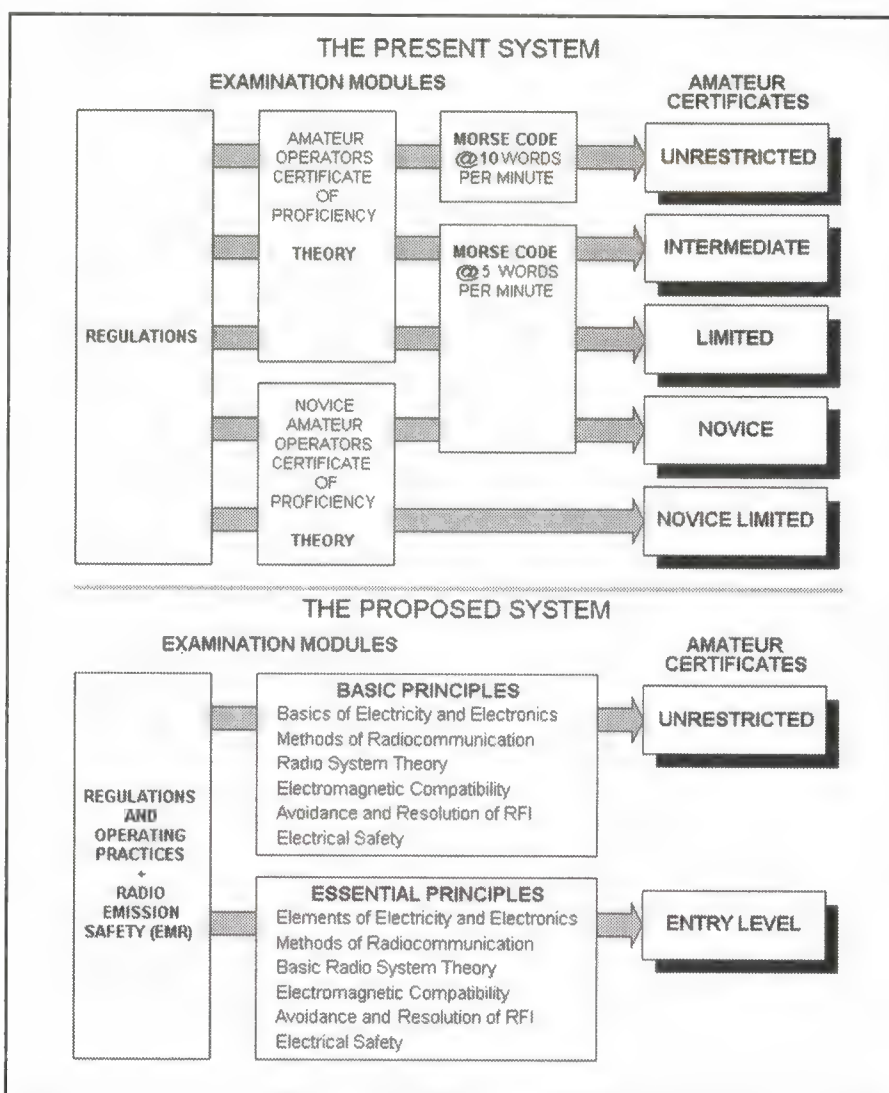
licence is important, but it cannot be properly considered alone, divorced from the wider issues facing amateur radio in Australia today.

The Australian radio amateur community and the WIA has to come to grips with the fact that the amateur radio examination and licensing system has become irrelevant to people in today's society who have an interest in

**The Australian radio amateur community and the WIA has to come to grips with the fact that the amateur radio examination and licensing system has become irrelevant to people in today's society who have an interest in radiocommunication technology**

Wireless LAN technology. The enthusiasts a competing interest, while

syllabuses, examinations and licensing each need a wholesale overhaul. Ubiquitous, low-cost communications technologies – cellphones and the internet – influence people's views and understanding of amateur radio. Time pressures on the one hand and limited expendable incomes on the other, affect people's view on hobby activities. Wireless LAN technology offers enthusiasts a competing interest, while



**Figure 4.** The authors propose a simplified examination system, based on revised syllabuses (summarised here in the examination modules), leading to a two-tiered licensing system. Candidates would not have to take the Entry Level licence before attempting to gain the Unrestricted licence. Each licence stands alone. This differs from the UK Foundation Licence system.



handheld 434 MHz LIPD voice transceivers are another example. Any response to the decline in amateur radio must take the gamut of such influences into account. A quick cut-and-paste of the current Novice syllabus and conditions will not suffice.

A revised and revitalised amateur radio examination and licensing system would offer some contribution to reversing the declining interest in and understanding of science and technology in Australia. An Entry Level licence with appropriate syllabus settings could have strong appeal as a curriculum complementary study course for school students. But it would also have appeal to people of all ages.

The time to act is now, before the World Administrative Radiocommunication Conference makes a decision on the future licensing requirements for amateur radio. We must be ready to take action to revitalise the amateur radio licensing system at the earliest opportunity, else the chance to bring about effective change will be lost and the decline of amateur radio will turn to a self-fulfilling demise.

ar

## ABOUT THE AUTHORS

Jim Linton VK3PC and Roger Harrison VK2ZRH issued a discussion paper "Amateur Radio - Future Direction" on 7/12/1985. It was published in both *Amateur Radio Action* and the WIA journal *Amateur Radio* magazine. The authors received the WIA's Higginbotham Award for the paper. That document is recognised as being the first serious look at possible ways to increase Amateur Radio's attractiveness and relevance in society.

Both authors began an interest in the hobby as shortwave listeners in 1962; other parallels in their lives include being journalists. Jim Linton has worked for a major multinational news agency and has had many articles published in *Amateur Radio* magazine. Roger Harrison spent his early career working in scientific research (part with IPS Radio & Space Services), is well-known as an editor of some popular electronics magazines, and industry publications.

Jim Linton VK3PC is the long-serving President of WIA Victoria. Roger Harrison VK2ZRH has been Secretary of the WIA NSW Division, NSW Federal Councillor, WIA Federal Media Liaison Officer, member of the WIA-ACA Liaison Team and Federal WIA Vice President. He is not currently a member of a WIA Division.

Both the 1985 discussion paper and the Linton-Harrison Report 2003 are based on personal views, which may not necessarily be reflected in WIA policy.

The authors draw on their experiences and knowledge in presenting this discussion paper at a time when the introduction of a new entry level licence is being seriously considered for Australia, and on the eve of a possible major restructure of the amateur radio licensing system.

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# CODAN HF Transceivers

## Part 1

by Malcolm R Haskard (VK5BA)

RSD 1244 Bassnet Road, One Tree Hill, SA 5114.

Year 2002 being "The Year of The Outback" provides an incentive to examine the extensive range of Eilco/Codan HF transceivers that over the last forty years have brought to the people of the outback improved communications and safety. Even when older Codan transceivers are discarded others find use for them, including amateur radio operators and four wheel drive club enthusiasts.

This article, in two parts, provides brief historical background information on Codan, an overview of their design and manufacturing philosophies and finally a summary of HF transceivers marketed.

### Background of Codan

In the 1950s three young men attended the University of Adelaide, Ian Baker Wall, Alastair Edward Rose Wood and Irvine James (Jim) Bettison. During their first year Ian and Alastair were drawn together through common interests in engineering and particularly electronics and they became friends. On graduation in 1954 Alastair, with a Bachelors Degree in Mechanical Engineering, undertook part time lecturing in Mechanical Engineering while Ian, graduating in 1955 with a Bachelors Degree in Electrical Engineering, was employed by Philips at their factory Radio and TV Design Laboratories at Hendon, Adelaide. Over those years the two formed a working association that

designed and built electronic equipment. They both obtained amateur radio certificates of proficiency being allocated the call signs VK5IW and VK5ZAE respectively and together they built UHF mobile amateur radio equipment, perhaps their first joint venture into communications. Known everywhere as Wood and Wall, they initially operated out of Ian's home at Hampstead Gardens designing and building equipment for the University, repairing taxi receivers. Gradually their home business grew until with their normal day work there was no time for anything else. A decision needed to be made whether or not to go full time into their own engineering business.

Jim Bettison's interests were a little different from his University

engineering friends. There were common bonds such as a love of good cars (Ian having at the time an MG TC, Alastair a Triumph TR3A and Jim a Triumph TR2, both with electric overdrive). Jim's university fields of study were very different, yet complemented the two engineers, and included history, law and commerce. In 1961 he graduated with an Honours Degree of Bachelor of Arts in History. Having a love of theatre and the arts he secured for himself the agency for Strand Electric, UK, theatre lighting equipment manufacturers. When needed Wood and Wall were engaged to assist him designing variable reactors and such to control the lighting. From this situation it was but a small leap for the three to form a joint company, Ian and Alastair providing the engineering side and Jim the needed skills in commerce and law. The new company, The Electronic, Instrument and Lighting Company Limited was formed on the 1st July 1959. With the financial help of parents, adjacent house properties at 7 - 9 Osmond Terrace, Norwood were acquired, and early 1960 the company moved to this address.

In the beginning the company took on a wide range of work for it was a matter of survival. They applied their skills to redesign and manufacture medical instrumentation amplifiers for the company Both Equipment, the servicing of electronic instruments for government departments and other organisations, as well as the development of their own products such as theatre sound and lighting systems. Ian remained at Philips until the end of 1959 and even in later years used his TV knowledge and skills to do part time lecturing in TV at the SA Institute of Technology, School of



Figure 1. Type 6104 transceiver, Eilco's first set. Note the two whistles used to give the emergency tones



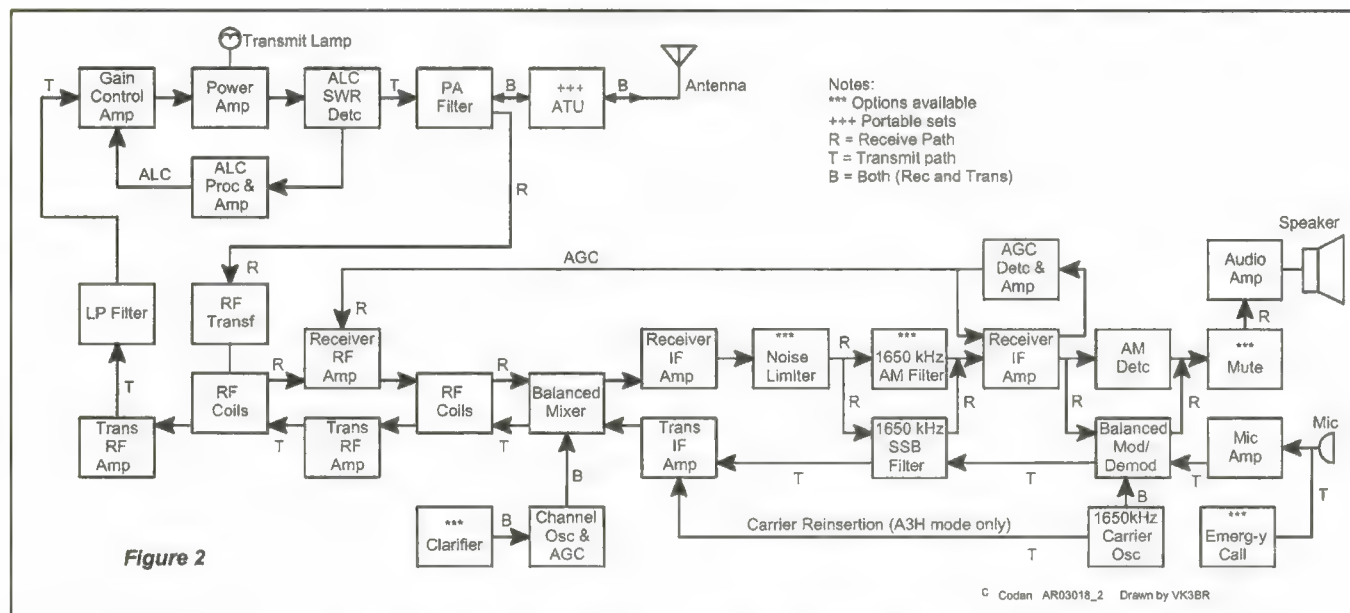


Figure 2. Block diagram of a typical Codan transceiver

Electronic Engineering. The Anglican Bush Church Aid Society operated a School of the Air from a base station located at Ceduna, South Australia and through Gordon Bowen (VK5XV) approached Eilco to assemble some HF radio transceivers that had been designed by the late George Cameron. Through undertaking this work Ian and Alastair believed they could produce a better transceiver. By 1961 they had developed the portable "lunch box" transceiver, type 6104. It was compact, rugged, reliable, weighing 10 lbs, having its own in-built antenna tuner so that it could work with the simplest of antennas, matching indicated by simply peaking the brightness of a lamp, and requiring only 3 amps current from a 12 volt battery or mains supply. This set became the standard for everyone, mining companies, surveyors, church organisations, government departments, all who were using HF radio in the outback. Figure 1 shows this set. At this stage it is interesting to note the Eilco custom of issuing a product with a four digit type number, the first two digits indicated the year the idea for that product originated (not the year released to market), while the second two digits represented the product sequential number for that year. This numbering system was retained up until the nineteen nineties, however with time the second two digits were frequently selected to have a type number which simply had a good "ring" about it.

In the late 1960s there was an international move to change HF communication methods from AM to SSB, which, although a more complex system, was more efficient in its use of the HF spectrum. Eilco initially set about designing a hybrid set utilising quick heat valve technology for the final stage of the transmitter and elsewhere transistors. Fortunately, towards the end of the design phase RF power transistors were just starting to appear on the market so the final version was delayed and redesigned, so when released, as the type 6924, it was a fully solid state transceiver. Although the delay caused some difficulties, as will be seen later, it laid the foundation for the years ahead. The change to SSB meant that all of the Royal Flying Doctor Service bases needed to be upgraded and so the Government called an initial tender in 1968. Eilco applied. At the time there was a feeling in some quarters that a newly formed, small company like Eilco could never handle a half million dollar project. Interestingly, Eilco must have sensed this for they had previously approached Alf Traeger to see if he was interested in a joint operation, he having the name and contacts and Eilco the new technology. Their invitation was declined. As frequently happens with tenders for new systems various additional considerations arose and so tenders were recalled. In June 1970 Eilco received the purchase order to re-equip twelve RFDS base stations. The project

was completed in 1973, on time and within budget. Eilco continued to prosper.

Over these years the premises at Norwood had been extended, but increase in work meant that staff numbers had risen, so that by the early 1970s larger premises were needed. In October 1973 the company, now employing some 80 people, moved from Norwood to a new purpose built factory on two hectares of land at 81 Graves Street, Newton, an area zoned as light industrial.

During the early years agents had been set up to market the Eilco products, one in Western Australia being Associated Electronic Services (AES). Because of the delay in releasing the type 6924 set, Eilco could not provide SSB transceivers for AES to market. AES was therefore told to market sets it was able to get. At the time the US company Granger Associates were assembling SSB transceivers in Sydney, but now wanted to dispose of this facility. Consequently AES purchased it allowing them to source their own transceivers from there, raising the potential of becoming direct competitors with Eilco. The possibility of a joint AES/Eilco venture was explored and an association was formed whereby each had a half share, AES contributing its manufacturing facility as well as its marketing network while Eilco brought with it the RFDS contract. Basil Reynolds the Director of AES suggested that the new association be



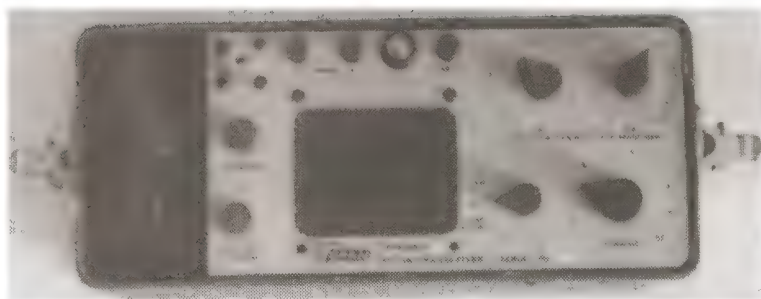


Figure 3a

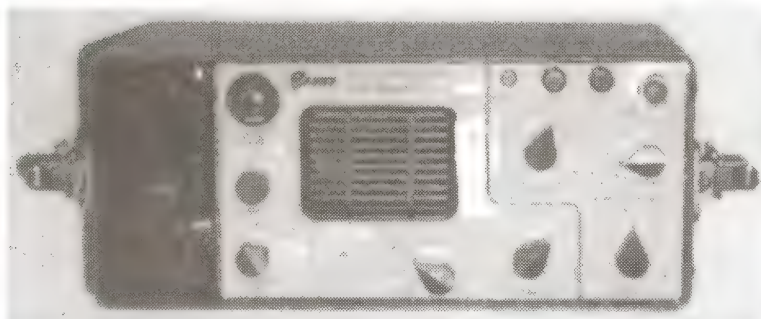


Figure 3b



Figure 3c

called Codan, an industry acronym for Carrier Operated Device (Delay (2)) Anti Noise, a squelch or muting system. Being a simple name, a word already known in the industry it was accepted. Codan Ltd business grew. About 1981 it was resolved that Codan and Eilco should amalgamate, AES remaining a separate entity, to concentrate on ticket machines and related products. This decision was quickly followed by a second move in 1983 when Eilco acquired all of the shares owned by the AES Director, Basil Reynolds, thus giving total control of Codan, including the name, to Eilco. With the growing market for SSB equipment the Codan name had now become better known than Eilco, so in 1983 a decision was taken to rationalise the whole activities of the company under the name of Codan Pty Ltd. The result was that the company became more focused and looked at ways of expanding its communication products. They did this by firstly, extending their HF range of equipment using recent technology advances, secondly moving up in frequency of operation to satellite and earth station equipment and finally placing even greater emphasis on the international market.

As part of the new Codan image, new styling for sets and a Codan logo were produced under contract with Chris Myers (product designer) and Lyndon Whaite (graphic designer)

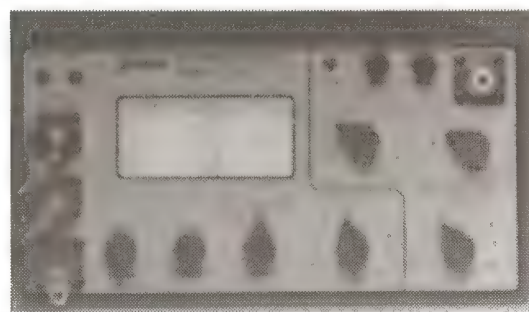


Figure 3d

Figure 3. Four versions of the portable type 6924 set. a) Original version, b) Mark two version having improved performance and used thick film modules, c) The new styling, having the same circuit as the Mark 2 and called the 6924B, d) Ruggedised water proof version called the type 6924C

respectively, both lecturers in the School of Design, Adelaide School of Art at the Underdale Campus of the SA College of Advanced Education. The early AM transceivers utilised armed service styled knobs and colours (blue grey) giving the impression these sets were equally rugged. The change to the standard grey and green colours with teardrop shaped knobs in 1968 conveyed the elegance seen on some American equipment of that era. The 1984 new image change was to black panels with black collet knobs, keeping products aesthetically pleasing, making touch up/restoration easier, as well as allowing older reliable sets to be "disguised" as if they were truly a new generation of products. The first of the new style sets released was the type 8525, a frequency synthesized transceiver allowing up to 99

channels which won the Electronics Association of South Australia's 1986 bi-annual Gold Cup, awarded for excellence in engineering and commercialisation.

Codan had an interest in the satellite communication field as far back as 1972 when the Australian Post Office published a study advocating Australians should enter it. In 1979 when the Hon A. A. Staley announced that a domestic system was envisaged for Australia, Codan responded. An area of unique need was identified, namely small earth terminals for two way communication and from 1980 Codan engineers, supported by the largest Industrial Research and Development Grant awarded hitherto by the Commonwealth, became involved in developing such a terminal for Ku-band using Australia's own Aussat satellites. In 1983 Codan received its first satellite equipment related order for five receive only earth terminals. Codan again diversified and moved into C-band equipment giving wider market opportunities. In 1984 a joint venture was commenced with M/A-Com Inc. of USA, called Microwave Associates Australia Pty Ltd and based in Sydney, to address the growing market for microwave communication systems, both for terrestrial and satellite communications. Early 1989 in conjunction with Sattel Technologies of California, they



were awarded an OTC contract to establish and operate a satellite based telephone service in the South Pacific Region. During 1991 Codan joined a new mobile satellite communications consortium which included Auspace Pty Ltd, CSIRO, Mitec Pty Ltd, Mosaic Electronics, Net-Comm and the Digital Communications Group at the University of South Australia. In 1998 Codan acquired Mitec, the Brisbane based company specialising in microwave RF design. All this allowed Codan to aggressively expand its existing range of satellite communications transceivers, to diversify into terrestrial microwave links, and to acquire specialist defence projects. While the initial growth in the satellite area had been slow it has currently reached the level where it is providing income at a level similar to the HF products.

Codan directors were well aware that for survival they needed to look beyond the Australian market. Once the reliability of their products was established in Australia this gave opportunity to look elsewhere, using Australian case histories to further the cause. By 1975 they were selling HF equipment into African countries. About this time a license to manufacture selected Codan products was granted to a New Zealand company owned by W (Bill) E. Barlow, Electronic Products Ltd. In 1978 Codan acquired the major interest and renamed the company in 1979 Codan (NZ) Pty Ltd. All this was to get behind NZ import licenses and when such licenses between Australia and NZ were abolished Codan (NZ) was closed in 1989 and their operations transferred to Adelaide. In a similar way to get behind trade barriers and into Europe Codan established in 1980 a marketing office and some manufacturing facilities at Fleet, Hampshire, England. Again once barriers were abolished the manufacturing facilities closed, but a marketing office retained to cover Europe, Africa and the Middle East regions. An office, previously in Vancouver, Canada, but now in Manassas, USA covers Canada, USA and South American countries. At present Codan exports to over 150 countries, accounting for some 85% of their production. Truly a global service.

## Design and manufacturing philosophies

An original aim of the company was to bring professionalism to the electronics industry and this was interpreted by the founders in several ways all evident in their HF products. Four ways that reflected their professionalism in technical and business matters will now be considered. Combined, these factors led to the development and marketing of reliable cost efficient products.

- i) Utilising the latest advances in technology in products.

The original transceivers such as types 6104 and 6332 utilised semiconductors wherever possible. Initially this was germanium transistors in the receivers, modulators and DC to DC converters required to generate any voltage higher than the battery voltage. Vacuum tubes could only be used for the transmitter. However, as soon as RF power transistors became available they were utilised and resulted in new type 6801 and 6924 transceivers. Similarly to ensure good receiver selectivity narrow band IF filters were incorporated, right from the outset. Initially for AM work ceramic resonator filters were used in the first few sets, but from then on magnetostrictive resonator mechanical filters were employed. The advent of SSB operation immediately brought a change over to high quality narrow band crystal filters, raising the IF frequency from 455kHz to 1650kHz to give a marked improvement in image suppression at the higher frequencies of operation.

Sets were always crystal controlled, a procedure necessary to achieve good frequency stability no matter whether the sets were used in the outback, in vehicles or ships, locations where extremes in temperature frequently occur. Printed circuit cards, were introduced in 1964 when a new single board receiver was made, designated the type 6415 and employed in several transceiver types. In about 1978 a decision was made to introduce thick film daughter board modules, each coated

with a non transparent epoxy material. This not only simplified construction, but added a measure of security to their products, in that what was in the modules remained confidential. The type 8525 set saw the introduction of microprocessor control and frequency synthesis and from then onwards there were moves to employ software to provide improved performance and flexibility.

- ii) Ensuring that products were appropriate for their application, both in terms of electronic, mechanical and ergonomic performance, including appearance, robustness, reliability and maintenance procedures.

While excellent electronic design was essential so too was the mechanical construction and appearance aspects. Cadmium plated sheet steel of 16 and 18 gauges was normally used for construction, providing strength, lightness and resistance to corrosive materials. Aluminium of 18 gauge was employed for the front panel escutcheon. Controls and operating procedures were kept to a minimum so that people of all ages had little difficulty in using them. Further, the company maintained a comprehensive in house manufacturing facility enabling it to maintain good quality control and quality assurance procedures on all products.

No matter how well a set is designed, failures and/or upgrades will occur, so sets had to be repaired or modified. Consequently the manuals made available with each product were very comprehensive. Placement of components on PCB drawings, step by step descriptions of operation, upgrades, tuning, etc. were all included. By and large there was easy access to boards and components with boards either having cable connectors between them or plug in card connectors used.

- iii) Incorporating flexibility in products, that is, sufficient options given so all sectors of the market could be satisfied.

Even the original type 6104 set was offered in four variations. The standard was a 5 channel set, but



# New additions to the Federal Awards Program

The Federal Awards Program now has two new awards certificate updates.

## DXCC Certificate

### W.I.A. Achievement rewards

The DXCC Certificate has now been updated with "achievement labels" that can be readily attached. Those that have achieved a greater Country total than 100 can now apply for special achievement rewards that increment from 125, 150, 175, 200, 225, 250, 275, 300 and 325 entities. These achievements are rectangular in shape, and have been designed to be placed neatly along the bottom edge of the DXCC certificate.

If you have achieved these they all fit nicely along the full width of the internal border and are colored Dark Green on a smart gold background.

### W.I.A. Honour Roll award

This special reward is for those that achieve minus nine of the total DXCC entity list. Its shape is round and is colored smart gold on a Black

background. At this period the special achievement total is 326 entities. The Honour Roll achievement label is placed on the top left hand side of the DXCC certificate.

### W.I.A. DXCC Excellence award

This very special reward is the highest of all. It's for those that achieve the maximum total of the DXCC entity list.

At this period the special achievement total is 335 entities.

Its shape is round and is colored Black on a smart gold background. The DXCC Excellence achievement label is placed on the top right hand side of the DXCC certificate.

"Free" DXCC smart achievement labels can be requested via the Federal Awards Manager with a stamped address envelope, they are issued only once to a single certificate.

Non members also can apply although a small fee will be required.

WAVKCA. (Worked all VK call areas) Certificate.

This award certificate is one of our most prestigious, both here in VK and overseas or Dx Countries. We have updated this certificate as a face lift and added all Australian A.C.A. VK9 prefixes as they are in 2003.

The prefix areas are:

VK9C Cocos Keeling Islands.

VK9L Lord Howe Island.

VK9M Mellish Reef.

VK9N Norfolk Island.

VK9R Rowley Shoals.

VK9W Willis Islands.

VK9X Xmas Island.

Samples of these updates will be soon viewed on our National Website or alternatively by email.

"This is another Federal Awards update, working to keep pace for our members in 2003".

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## CODAN HF Transceivers continued

there was also a single channel set, a 12 channel set in a larger case, plus a 5 channel version for light aircraft. Later sets had even greater range of options, examples being, number of channels, single and two frequency simplex; modes offered AM (H3E), CW, LSB, USB or combinations; clarifier - narrow or wide range, two tone call encoder, noise blanker, mute facility; battery pack; vehicle installation kit; whip antenna. Marine versions were available and these had an added option of output power level.

iv) Using the process of incremental product design to gradually improve the overall performance of products. The original 6104 set was constructed using valve techniques. Transistors were held in rubber grommets in the chassis with other circuit components mounted on tag strips. Both valves and transistor circuits could now be assembled in the same way. Once the 6415, a single PCB receiver was developed, it became the receiver section of the 6104 set, which was now called the 6104 Mark 2. This same combination

was then used in the type 6332 transceiver, a self contained set having a screw-on portable battery pack, whip antenna and carry bag. This idea of utilising modules developed in a range of products became even more common when SSB sets were made. The company developed a modular system of generation and reception of SSB signals, shown in Figure 2, and it became their standard. Improved blocks or modules developed for next generation sets could then be utilised in older type sets, resulting in a upgraded type number. A good example is the type 6924 set and illustrated in Figure 3. After thick film modules were developed and improved RF power transistors became available a new version the type 6924 Mark 2 was released. Next there was a cosmetic change from the green/grey/teardrop knobs styling to the black/silver grey/black knobs version which was renumbered 6924B. The 6924C version is a ruggedised, waterproof version of the 6924 Mk 2. Similar circuits, concepts and flow can be seen in the sister sets

type 6801 and 6801 Mk 2, that is, these sets match the 6924 to 6924 Mk 2 upgrade, but have a higher power RF amplifier with 50 ohm output impedance. Some sets were so similar that the one manual covered a series of transceivers. Naturally this process makes good engineering sense for it allows a steady progress in updating products, shares and minimises design and production costs as well as making life easier for those undertaking set maintenance.

(To be continued)

## Notes

1. For a more detailed history of Codan see, Haskard, M R (2002) Radio Waves, "Codan - the era after Traeger Part 1", No. 81, July 2002, Historical Radio Society of Australia, Melbourne, Australia.
2. The CODAN acronym - According to F E Terman in "Radio Engineers' Handbook", McGraw-Hill, NY, 1943, page 653 the D stood for Device, yet Rob Gurr (VK5RG) maintains that in the local Australian industry it stood for Delay.

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## Passive Grid

A simple way to achieve a broadband low SWR input match for a passive grid linear amplifier appeared in the *In Practice* column of Ian White G3SEK in the November 2002 issue of *RadCom*. The idea is to form a low pass Pi network with the input capacitance of the high power tetrode, and so absorb the input capacity into the low-pass filter and obtain a wide band low SWR input match. This was described for a Russian 4CX800A/GU74B but the technique could be used with other power tubes.

The basic passive grid input circuit is shown in Fig 1. The necessary voltage swing is developed across a 50 ohm resistor, R1, which absorbs the drive power. The tube in Class AB1 has a high input impedance and, even if Class AB2 operation is attempted, the low value of R1 swamps the lower valve grid impedance. The resistor R1 provides a load to the driving transceiver. However, the input capacitance of the power tube is in parallel with R1 which can result in a poor SWR on the higher HF bands.

Another problem can arise due to the low drive required by many tetrodes. A 100 watt transceiver can provide too much drive. You could turn down the output of the driving transceiver but watch out for the power spike at initial operation that is due to the ALC action of the transceiver and the means of reducing power employed using the ALC circuit. This has caused problems due to overdrive with some amplifiers, resulting in damage to power devices and the generation of spurious signals and EMI problems.

A way of overcoming the overdrive problem was suggested, using negative feedback, and this is the purpose of the unbyassed cathode resistor shown in Fig 1. This suggestion originated in the tube data sheet. For the 4CX800A/GU74B around 30 ohms is suggested which will result in a drive power requirement of around 50 watts. This will be within the range of the transceiver drive control without the danger of serious overdrive. The transceiver driver will also be operating in an area where it can produce a cleaner drive signal. ALC should be provided

from the amplifier to the transceiver to hold the system in check and prevent overdrive from occurring.

For situations where the drive requirement is much lower the best option may be to use a power attenuator. The use of TO220 thick film power resistors was suggested in this case.

The matching circuit to provide a wide band input match is shown in Fig 2. This is a skeleton circuit to show the low pass filter components. The 4CX800A/GU74B has an input capacity of 51 +/- 5 pF which in Fig 1 appears in parallel with the 50 ohm resistor, worsening the input match on the higher HF bands. The input filter shown in Fig 2 is designed to be matched in the region of 30 MHz and uses the input capacity as one capacitor of the Pi filter therefore only requiring one

inductor and one capacitor.

The values given are for a 51 pF input capacitance; the inductor can be scaled for other values of input capacitance by multiplying the inductor by 51/C. The capacitor C1 is equal to the tube input capacitance. A silver mica capacitor is preferred. For the 4CX800A/GU74B with 51 pF input capacitance the inductor is 0.22 microhenries. The inductor can be a small self supporting coil. Other values of inductor will vary the match as shown in Fig 3. For inductors between 0.2 and 0.23 microhenries the SWR dip can be set between 20 MHz and just over 30 MHz. Adjustment of the value of C1 and L will allow tailoring of the SWR curve to obtain an optimum result. You could push the compensation into the 50 MHz region by moving the dip into the 40 MHz region at the expense of a larger SWR bump at lower frequencies.

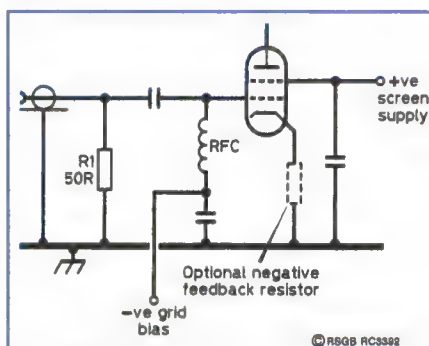


Fig 1. Passive grid input circuit. The 50 ohm resistor is the driver load, and an optional negative feedback cathode resistor is shown in this skeleton circuit.

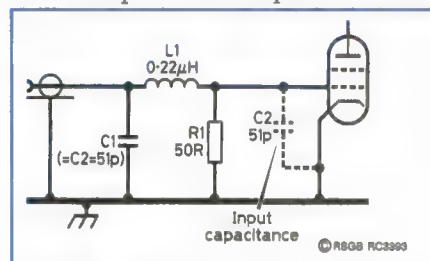


Fig 2. Additional components C1 and L1 form a low pass filter with tube input capacitance and help smooth out input SWR.

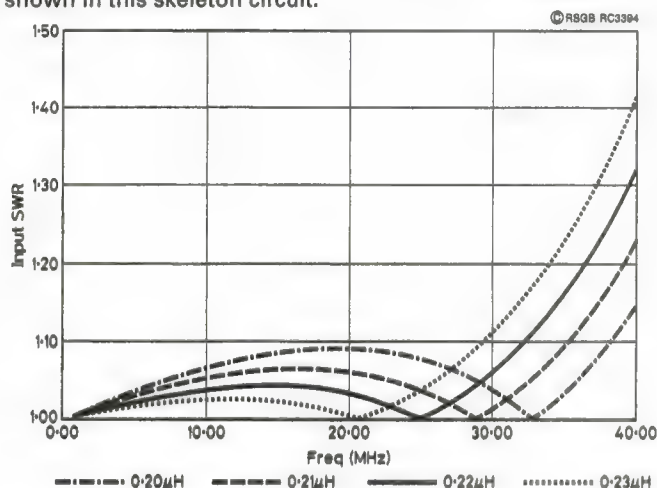


Fig 3. Input SWR with various values of L1. A value of 0.22 microhenries is optimum but is not critical.



## Portable 2 Metre Yagi

A small two metre Yagi which could be carried in a car boot was described in QEX Sept/Oct 2002 by Zack Lau W1VT. The Yagi was designed to fit into the boot of Zack's car and uses a 32 inch boom. Zack W1VT designed the Yagi using The Yagi Analyzer program which is distributed with the ARRL Antenna Book. The antenna was built with a one inch square aluminium boom 32 inches long. The elements were made from 0.25 inch diameter solid aluminium rod and were mounted insulated from the boom using home made Teflon insulators. The driven element was made out of 0.25 inch brass rod or tubing. The match was a T match with a coaxial balun to give balanced feed with coax.

The antenna is shown in Fig 4. The element lengths are for insulated elements. If you want to use un-insulated elements you would need to add 0.133 inches to the element lengths. For information on element length corrections there is information available which is probably more critical for 70 cm and 23 cm antennas. For information you could look at:

The ARRL UHF/Microwave Experimenters Manual.

The VHF UHF DX Book edited by G3SEK.

G3SEK's Website [www.ifwtech.co.uk/g3sek](http://www.ifwtech.co.uk/g3sek)

Articles by VK2KU, AR March 1999 and by VK2ZAB, AR November 2002.

The feed system is a T match made from 9/32 inch brass tubing with straps made from 20 mil copper sheet. The joints are soldered after adjustment. The feed system is shown in Fig 5. The balun was made from UT141 semi rigid coax and is a half wavelength of coax. The balun coax is shown in Fig 6. The centre conductor pigtails should be long enough to wrap around the ends of the T bars. The balun coax is coiled to reduce the space occupied and is held in place by a plastic clip.

The SWR was under 1.8:1 across the two metre band. The computer calculated gain was 8.3 dBi and the front to back ratio was at least 20 dB.

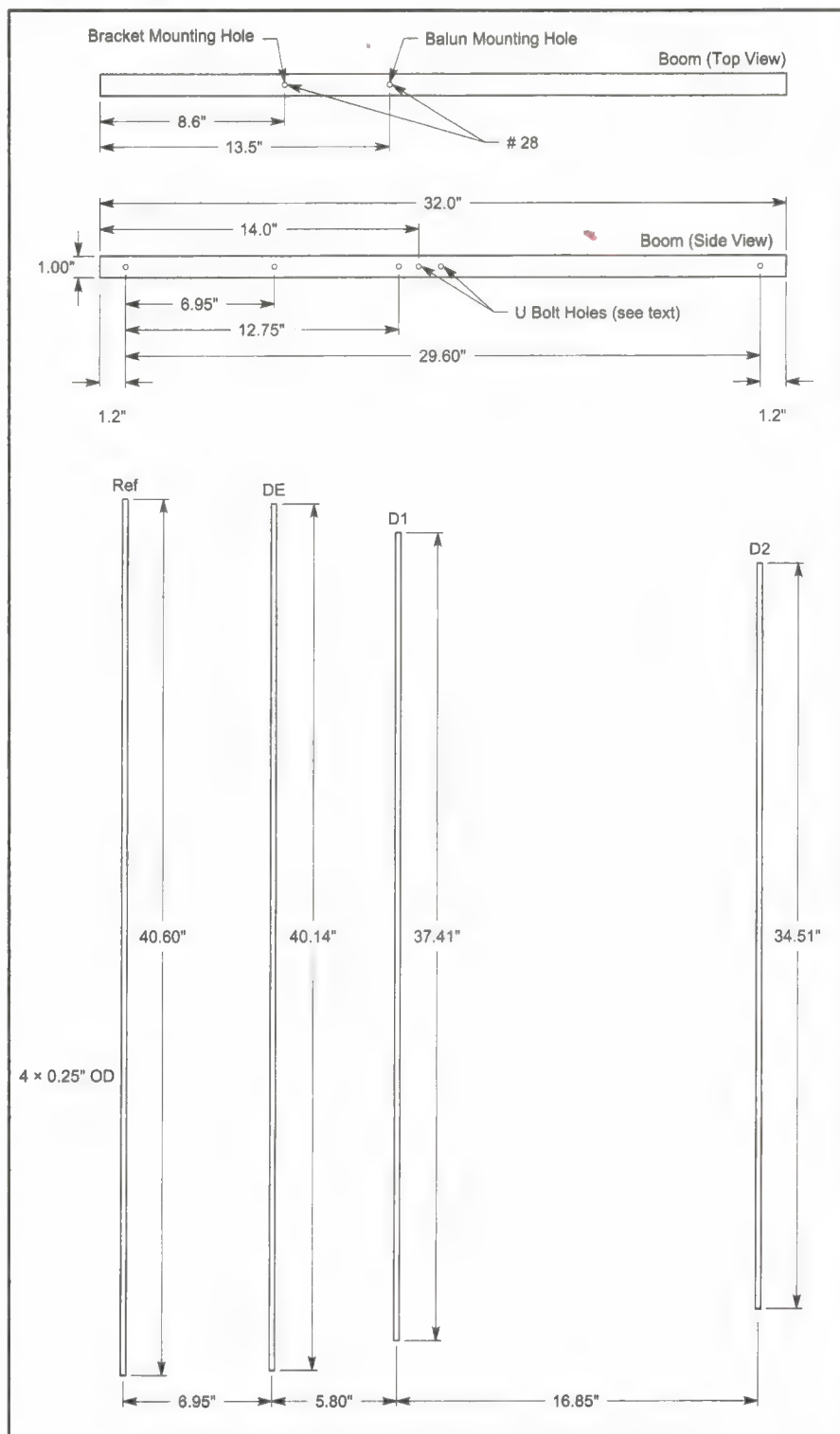


Fig 4. Boom and elements.



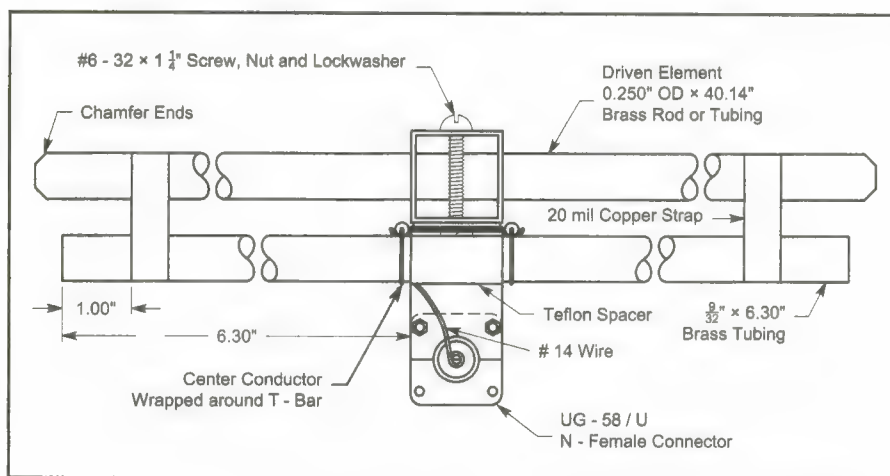


Fig 5. Yagi feed system – T match.

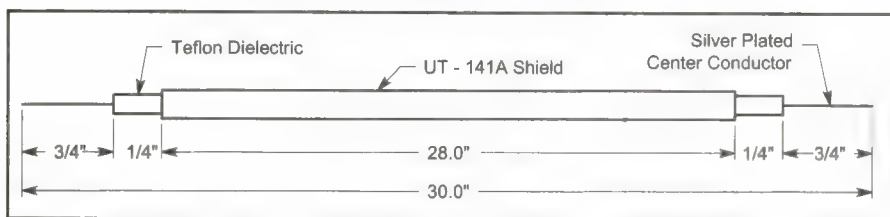


Fig 6. Half wave UT141A semi rigid coax half wave balun.

## Rusted Threads

A useful tip about how to deal with rusted threads appeared in the *In Practice* column of Ian White G3SEK in *RadCom*, January 2003. The tip comes from Graeme G0EEA.

Unsticking a rusted nut on a U-bolt is often only half the battle. The nut must then be unscrewed along the long rusted thread. This can be speeded up by applying some automotive valve grinding paste.

This can be obtained from an automotive spare parts shop. Don't forget to clean it off after use. Use a lubricant coating that won't seize up next time.

## Feeder Loss

An interesting table shows the SWR to be found at the fed end of a lossy feeder terminated in a short circuit. The short circuit results in a very high SWR. The table appeared in the *Down To Earth* column of Ian Poole G3YWX in *RadCom*, January 2003.

The SWR found at the fed end is much less than the high SWR due to the short circuit and illustrates the effect of feeder loss on the SWR indicated at the radio end of a feeder.

The power at the transceiver is constant but both the power at the far end and the reflected power are attenuated by the feeder attenuation. Thus, as shown in Table 1, a 2 dB feeder loss will never result in an SWR greater than 4:1 at the transmitter. This is the loss of 10 metres of RG58 in the 144 MHz band. So, if you use this thin coax, you may well think that your antenna is better than it is. A similar length of RG213 would show a maximum SWR of approx 10:1 for the same antenna termination.

One use of the table would be to check the loss of a length of cable. A short circuit termination is fairly easy to make. However, it would be wise to have some attenuation between the transmitter and the SWR meter so as to minimise the effect on the transmitter. A suitable roll of RG58 or other thin and lossy coax would serve as a suitable attenuator. A 3 dB loss between the transmitter output and the SWR meter should provide protection. A 6 dB attenuation would be even better. Simply read the SWR presented by the cable under test when it is terminated in a short circuit and then refer to Table 1 to find the cable loss.

Table 1. VSWR created by a lossy feeder terminated by a short circuit at the far end.

Feeder Loss dB	VSWR Reading
20	1.02
16	1.05
13	1.10
10	1.20
7.5	1.4
6	1.6
5	1.8
4.5	2.0
3.5	2.5
3	3
2	4
1.75	5
1.5	6
0.75	10
0.6	15
0.4	20



## VK1 News

### Forward Bias

There were two significant events during the past reporting period, the Division's AGM and the visit by the president of the RSGB, Bob Whelan (G3PJT).

In spite of the Constitution being changed last year to allow for a reduced quorum of 15 members at a General Meeting, 35 members turned up at the AGM on Monday, February 17, 2003. Some members even had to sit on the floor at the back of the hall. After handing out the annual report, each committee member answered questions about his portfolio and provided background information on some of the decisions taken by the committee. The following members were elected to the new committee: Alan Hawes (VK1WX) President, Phil Longworth (VK1ZPL)

Senior Vice-President, John Woolner (VK1ET) Vice-President, Deane Walkington (VK1DW) Secretary, Linden Orr (VK1LSO) Treasurer, Peter Kloppenburg (VK1CPK) Membership Secretary, Russell Manning (VK1JRM) Committee, Robert Howie (VK1HBH) Committee, and Peter Marcusson (VK1USJ) Committee. Gilbert Hughes (VK1GH) was re-elected as Federal Councillor to represent the Division at the Federal Annual convention. The last official act by the previous committee was to appoint Alan Hawes as a second Alternate Federal Councillor.

Bob Whelan spoke on the subject of the Foundation Licence at a special general meeting of the new committee which took advantage of Bob's visit to

Peter Kloppenburg VK1CPK

the ACT, where he will participate in the RSGB Commonwealth Contest (CW) in March. With the number of aspirant radio amateurs in the UK dwindling fast, the RSGB and the Radiocommunications Agency (RA) got together and created the Foundation Licence. Its purpose is to attract a new and young generation of radio amateurs and prepare them for HF operations, and open the door to the use of digital modes and the microwave segments of the amateur bands.

A full report appears elsewhere in this magazine and I thoroughly recommend a careful read of it as it has much information of value to Australia.

The next general meeting will be held at Scout Hall, Longerengong St., Farrer, on April 28 at 8.00 pm. Cheers.

## VK2 News

by Pat Leeper VK2JPA

The first item of interest this month is the upcoming annual general meeting that will take place on Saturday 12th April. There are three motions to be voted on and we expect some lively debate on at least one of these.

Now follows a report on the Central Coast Field Day, put together by our Bookshop Manager Chris VK2QV.

### Wyang 2003 :

#### It rained on the Parade

The 2003 Field Day was the victim of some welcome, if not entirely expected, wet weather.

For this reason attendances appeared to be down – for instance, the “flea market” was populated by a few determined souls – wet shoppers, wet vendors and wet equipment was the order of the day. The hassle of the rain, where the droplets appeared to be of that thin, nuisance type, made life uncomfortable.

The wet conditions also drove people under cover, again making life difficult as a several hundred wet and bedraggled hams made like sardines.

Still activity at several stalls appeared to be intense, the Dick Smith stall staff

for example resembling a wagon train besieged by angry Indians.

The WIA table managed to sell out of all but one item of deceased estate equipment, while the bookshop closed early due to the rain being blown in, damaging the books. Still it was a good day with most of the stock being sold.

The rain forced most people undercover

The Radio and Communications crew were at the show, Ron Bertrand VK2DQ/4 making a notable appearance marketing his Radio and Electronics School.

A pretty wet and miserable day, however an antenna purchase, a 2m linear and a fistful of QSL cards made it all worthwhile – along with the opportunity to renew old acquaintances and make new ones.

The Field Day was made possible by members of the CCARC putting in their time and effort – without

which, there would be no field day.

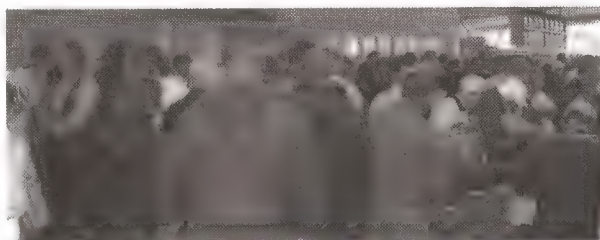
Bravo !

Chris de VK2QV

Thanks Chris. That's all for this month.



Buyers braving the weather in the Flea Market.





## VK3 Notes

by Jim Linton VK3PC

WIA Victoria web site: [www.wiavic.org.au](http://www.wiavic.org.au)  
email: [wiavic@wiavic.org.au](mailto:wiavic@wiavic.org.au)

### WIA Federal Convention

The major discussion topic at this month's WIA Federal Convention in Adelaide will be amateur radio licensing in Australia – four of out six motions on the agenda relate to this topic.

WIA Victoria has been encouraging its members to have their say on the issue by writing to their Federal Councillor.

WIA Victoria has submitted a policy motion which seeks to avoid unnecessary delay in Australian radio amateurs benefiting from licence changes expected as a result of July's World Radiocommunications Conference.

The ACA has indicated that there could be a delay of six months or even longer before it would act on the decisions of the World Radiocommunications Conference, particularly the expected removal of mandatory Morse code tests from amateur licensing requirements..

WIA Victoria believes it is possible to prepare now for the anticipated change, have the amateur Licence Condition Determinations drafted in advance, and minimise any delay.

In another motion, Proposed by WIA New South Wales, and Seconded by WIA Victoria, the Federal Convention will be debating whether there should be a new Entry Level licence in Australia.

In the past year there has been much discussion on this topic, the WIA Federal Council should be well prepared decide on the matter this month.

Two other motions concern the celebration of the WIA's centenary in the year 2010. WIA Western Australia has submitted motions seeking to lower the pass mark for theory examinations, and also put into the public domain the theory question banks.

The WIA Federal Convention will also consider annual reports from office-bearers, and coordinators, and statutory matters as required under Corporations Law.

The WIA Victoria team attending this important event is Jim Linton VK3PC, Federal Councillor, Peter Mill VK3APO,

Alternate Federal Councillor, and Barry Robinson VK3JBR, Observer.

### Banyule Council and amateur radio masts

WIA Victoria remains absolutely puzzled by the maverick action being mounted by the Banyule Council, in claiming that a small amateur radio mast is a Telecommunications Facility.

Banyule Council, in Melbourne's north-east, is mistaken and confused, and as a result is threatening the activity of amateur radio not only in Victoria but potentially throughout Australia.

WIA Victoria has been assisting its member, Mark Stephenson VK3PI, in trying to persuade the council's planning staff, Mayor and Councillors, that a mistake has been made by trying to extend the planning laws related to Telecommunications Facilities, to amateur radio masts.

While WIA Victoria began its involvement in January at the request of Mark VK3PI, the issue has been simmering for 18 months. It is clearly an injustice, and hopefully commonsense will prevail.

### VK3WI in another contest

The WIA Victoria callsign VK3WI was activated during last month's RSGB

Commonwealth CW contest, thanks to Jim Baxter VK3DBQ who worked 76 stations in five hours. He reported what appeared to be low activity but good propagation event.

VK3WI joined the other "headquarters" stations in the contest and logged GB5CC, VK2WHQ, VK4WIA and ZL6HQ also put on due to the added significance of HQ stations.

A member who is very proficient in hand sending CW is being sought for next year's Commonwealth contest.

Thank you to Jim VK3DBQ for his effort in putting VK3WI on the 80, 40, 20, 15 and 10 metre bands during this year's test.

### Good luck to VI5WCP

Four WIA Victoria members are mounting a DXpedition to Waldegrave Conservation Park off South Australia's Eyre Peninsula this month, signing VI5WCP.

The DX community, and particularly those chasing contacts under the Islands On The Air (IOTA) program are eagerly waiting for VI5WCP to appear on the bands 17-22 April, CW and phone on all bands except 160-metres.

The team is Tom Marlowe VK3ZZ, Peter Forbes VK3QI, Jack Bramham VK3WWW and Keith Proctor VK3FT.

The four members are mounting a commemorative IOTA DXpedition, marking the bicentenary of the naming of Waldegrave Island East by explorer Mathew Flinders during his coastal exploration of 1802-1803.

WIA Victoria was pleased to be able to provide a letter of support for VI5WCP.

A special bicentenary commemorative QSL card will be issued – SASE with sufficient for return postage to VK3ZZ QTHR, or via the bureau.

### Recruiting drive

A continued effort to increase WIA Victoria membership is reaping positive results, through new members who include former or lapsed members, and those who have not been a member previously.

The year 2002 saw the first rise in membership for many years, in a difficult climate with declining numbers of radio amateurs.

A few non-members with "issues of the past" have been questioning WIA Victoria, and the answers being provided mostly results in them rejoining the fold.

Thank you to those individual members, and our member radio clubs who have been promoting WIA membership and the need to support the organisation that support our hobby.



## Division News

### VK4 Notes

Qnews

Alistair Elrick VK4MV

#### World Scouting Jamboree Talk from VK4SGW

Steve VK4SGW, is full of vim and vigour after attending the 2003 World Scouting Jamboree in Thailand, he was a guest speaker at the TARCinc Management Meeting on Tuesday 4th of March 2003, to report on the trip.

He described his experiences at the Jamboree in helping run the Radio Scouting facility - a ham station which by all reports ran nearly 24 hours a day. Steve also gave an insight into the amount of organising that took place to make the event an unqualified success plus recount a number of humorous happenings during the jamboree.

Steve snared the attention of one and all at the talk with the aid of audio-visual technology, and so it wasn't just Steve pointing at a blurred figure in a smudged photo, that was on his temporary Thai Amateur Radio License!

Steve noted that the World Jamboree nearly didn't go ahead, due to organising staff attrition (several teams were sacked). Some organisers also warned leaders that the jamboree would be a survivalist one. The Jamboree site was at Sadahip Naval Base, approx. 2 hours south of Bangkok. Approximately 1000 military personnel, risk management teams and navy gunboats were deployed to ensure security at the Jamboree.

And then there is the North Queensland Amateur Radio Convention 2003, with notice being issued early for all to plan their trip.

The date is set for one of THE most

popular conventions in the Amateur Radio calendar world-wide. In its 30th year, the 16th North Queensland Amateur Radio Convention will be at James Cook University from PM Friday 19th to PM Sunday 21st September 2003. Activities will be centered, around University Hall, Roccocos Bistro and a number of lecture theatres.

#### Mackay Repeater up and running

Brian Coleman VK4DFD says "Good Friends" of the Mackay Club, VK4KBQ, VK4NY and associates have re-sited the repeater on their commercial site, and also, the local IRLP node 6450 is operated from their business site.

A special thanks to Doug, Vic and Andrew for the work, time and know-how they have devoted to this. So let's hear reports of the local voice and IRLP activity getting the most out of it.

#### Technology in schools

Ronnee Meachen VK4CO reported that Queensland Innovation Minister, Paul Lucas has met with seven students from the North Rockhampton State High School. The students will be taking part in the Professional Partnership Program, designed to introduce them to job opportunities in the Science, Engineering and Information and Communication Technology (ICT) industries.

These seven students will actually be placed in jobs, so that they can see what the industry is like and whether it's an area they'd like to pursue as a career. The

Association of Professional Engineers, Scientists and Managers Australia (APESMA) are running the program.

#### Col McCamley Award

At the Sunshine Coast Amateur Radio Club prior to the Annual General Meeting, the Col McCamley award is voted on and presented. Past WIAQ President Geoff VK4KEL gave a brief summary of the history of the award and its purpose, which is to recognise club members who have put a lot of personal effort into the club.

Harvey, VK4AHW, won the award. Among other things, Harvey showed great dedication, as he travelled from Dalby to the Coast just to attend meetings while he was President.

#### Barcfest in Brisbane

From the Brisbane Amateur Radio Club comes notice that Barcfest is on again this year, the date is the 10th of May, venue is changed this year to the Holland Park Bowls Club, 49 Abbotsleigh Street, Holland Park. So mark it in your diaries now.

#### Watch out for Pirates

Gordon Svenson VK4TS is a "non active amateur", so next time you hear VK4TS particularly on 20 metres, get as much info as possible because THAT VK4TS is a PIRATE!

Gordon, the real Gordon, lives in Maryborough and is in fact a life member of the Maryborough Amateur Radio Club. Please report this station as an "intruder" and to WIAQ Brisbane.

73s from Alistair

### VK5 Notes

Peter Reichelt VK5APR  
Hon Secretary.

The AGM will be held on Tuesday the 22nd of April 2003 at the St Johns Hall, Arthur Street Unley commencing at 7:30 p.m.

Nominations are called for the position President, Secretary, Treasurer and Minute Secretary.

Nominations are to be in writing and be received by the secretary prior to the commencement of the meeting. Nominations may be sent to the Secretary, GPO BOX 1234, ADELAIDE, SA 5001.

All nominations to be proposed and seconded by financial members and signed by the nominee as accepting the position.

Regards & 73



### VK6 Notes

#### RSGB Pres. Tours VK

Dennis 6KAD and I greeted Bob Whelan, G3PJT, hours after his arrival in Australia. The WIA Council had invited him and his wife to dinner on Saturday night. We enjoyed a Chinese Banquet and discussed the differences between life down-under and the UK. Bob left us a copy of the study pack for their new and very successful Foundation Licence. This new Licence classification has rejuvenated AR in United Kingdom, boosting some radio clubs membership by 600 %. Electronics retailers have sold out of Morse keys and oscillators.

The Foundation Licence and its suitability for Australia will be discussed at the National conference. Many thanks must go to VK4 and the QNEWS team for a very professional interview with Bob Whelan. It is well worth a listen. Go to <http://www.wia.org.au/vk4> and Click the Red NewsRoom Link.

#### New Award in Pipeline

Don 6HK advised the Council that a small group of individuals were working on setting up an "Indian Ocean Trophy" to be awarded to the first stations completing a two way contact from Australia to the African continent via tropospheric propagation in the 144-148 MHz band, i.e. not involving satellite, repeater or EME modes. The trophy would be similar in principle to the "Brendan Trophy" offered by the Irish Amateur organization for a contact across the Atlantic. A suitable body was sought to administer the award when rules and an actual trophy were settled. Council agreed in principle to the concept that the VK6 Division could provide such administration.

That's all for this month. Please remember that any comments or information for inclusion in VK6 notes can be sent to me at [vk6notes@wia.org.au](mailto:vk6notes@wia.org.au)

#### Volunteer Firebrigade to recruit AR Operators

The Kalamunda Bush Fire Brigade has written to WICEN hoping to recruit some members to join their team. Apparently they have plenty of people who want to fight fires but a shortage of those with the necessary skills to man their communications network.

If you live within 30 minutes of the Kalamunda area I'm sure they would love to hear from you. If you don't, then I am sure there would be other Volunteer Fire Brigades in a similar situation.

# Amateur Radio

**100% Amateur Radio**

### Silent Keys

#### Brian Jeffrey Slarke VK2ZCQ

It is with regret that I must advise of the sudden death of Brian Jeffrey Slarke VK2ZCQ on his property in Bellingen N.S.W. on 20 November 2002.

Brian Jeffrey Slarke was born on 25 February 1938 at Graceleigh Hospital, Bellingen N.S.W.

From a very early age he showed his intelligence, with his first words being, CAR CAR, not the usual MUM MUM.

His early school days were spent at Raleigh, due to there being no school bus to Bellingen. When a bus did run up the North Bank road, Brian sat on the engine cover and waited for the driver to engage the clutch, before the driver could change gear, Brian had it done. If ever there was a problem with the bus Brian was the first out to help.

From an early age he built crystal radio sets and moving picture shows from scrap cardboard etc. He was a prolific collector of things that may have been useful.

He lived his full life on the family farm with his brother Gerald. Ruth, his sister had married and moved to Cairns Qld.

When TV arrived, he was in his prime. He ran a very successful TV & Electronic business in the Bellinger Valley.

Brian was a man of many hats and he wore them all with proficiency. He was a fully qualified motor mechanic as well as his expertise in the electronic field. He was appointed a Justice of the Peace in 1990.

Twelve years ago he had a change of lifestyle and entered into a relationship with Marie, thereby gaining an extended family who all loved him very much.

To most who knew Brian and his white overalls, he will be remembered in the HAM environment, as the driving force in latter years behind the URUNGA convention where he was known as "Mr. Fox". It is said he only missed one of these get-togethers in 53 years. He was a

tireless worker also on the local repeater group. He never mastered Morse Code, "didn't need to" as he spoke fast enough.

Vale Brian VK2ZCQ

Submitted by Bill Sinclair VK2ZCV

#### Sid Ward VK2SW

**It is with regret that I must advise that Sid passed away peacefully in his sleep in the Calvary Hospital, Wagga Wagga, NSW at 11.30 am on March 17, 2003, in his 77th year.**

He is survived by his wife Jean, daughters Suzanne and Barbara and their families.

Sid gained his Amateur licence in 1948 and recently received the WIA Medal for 50 years continuous membership. His many Amateur friends in Australia and overseas will be saddened at his passing.

Tony Mulcahy VK2ACV



## Division News

### VK7 Notes

#### Cape Hauy DXpedition

The recent edition of the Australian Digital DX News reports on a DXpedition by Rex, VK7MO, to the rare grid square QE46 at Cape Hauy on the East Coast of Tasmania. The DXpedition involved backpacking the station over some 4 km of very rough terrain.

To quote Richard Rogers, VK7RO, "The whole thing is so ridiculous it has got to be worth doing". In addition to the radio equipment and laptop computer, a Honda generator, tent, sleeping bags, etc., also had to be carried in - and then were nearly blown and washed away during a big storm that night. How come most of us up here don't have the energy to drive to a hilltop to give out a new grid

A big thankyou from Rex VK7MO to all who participated:

Eric who overnighted with me and mopped up the tent to get us operational after we had had an inch of water over half the tent floor.

The deployment team of Ian VK7IR, Ian VK7IF, Mike VK7MJ and wives and friends.

The recovery team of Gary VK7HGO, Roger VK7HRN, Brian VK7HSB and wives and friends.

The liaison team of Dave VK7DM and Bob VK7KRW. Trevor VK7TS who operated my home station.

All the stations that took the time to make contacts with us or tried.

Despite very poor VHF conditions I was very pleased with the results:

- 2 VK3s on JT44 troposcatter on two metre
- 6 VK2s on FSK441 meteor scatter on two metre, one as far as Coffs Harbour
- 1 VK1 on FSK441 meteor scatter on two metre
- 1 VK3 on FSK441 meteor scatter on two metre
- 40 contacts with VK7s mainly on SSB and FM on 2 metre and 70 cm

The exercise demonstrated that with the new digital modes one can make regular contacts in poor conditions up to 1600 km on two metre with a back packed station comprising a small antenna and 60 watt. Overall a great team effort from members of the Southern Branch.

#### Silent Key notice

Tasmania lost another oldtimer recently when VK7BT, Tom Barnes became a silent key. Tom came to Tasmania in the 1950s and lived at Taroona but many TV interference complaints put an end to his Amateur Radio activities. After retirement he expanded his interests, becoming a councillor on the Kingborough Council. He reactivated his Amateur Radio activities both from his QTH and also from his holiday shack.

He leaves his XYL, Judith and a fine family. Vale VK7BT

## Club Notes

### Adelaide Hills Amateur Radio Society

The February AGM for AHARS saw following committee elected.

President Geoff VK5TY

Treasurer Bryan VK5SV

Secretary Paul VK5PH

Committee members Jim VK5JST, Geoff VK5JB, John VK5EMI

It was with regret the committee accepted the resignation, due to poor health, of Alby VK5TAW. He has been an excellent Secretary for a number of years. He will be a hard act to follow. However, Paul foolishly volunteered for

the position and we wish him well.

The AGM was followed by Peter Holland, who spoke about the Historical Radio Society, its origins and aims and showed members some of his 'treasures'. There were some sighs at the sight of the "Racal", a very special amateur unit; memories of their youth were brought to mind by some of the other radios.

As always, all visitors to VK5 are welcome to meetings of AHARS held on the third Thursday of each

month at the Blackwood High School. You may find your own way to the school or contact Geoff for more information. He is QTHR the callbook and phonebook.



## Port Macquarie Field Days

Queen's Birthday Weekend 7 & 8<sup>th</sup> June 2003

hosted by the Oxley Region A.R.C. Inc.

held at Sea Scout Hall Buller Street Port Macquarie

Disposals Fox Hunts Demonstrations Home Brew Displays

Contact Club Sec. PO Box 712

Port Macquarie 2444

bilsinvk@fasternet.com.au or (02) 6583 9302

BE  
PART  
OF IT



## We're back!

My apologies to all readers of DX Notes for the missing column in the March 2003 edition of AR.

When I think back on the innumerable times I have advised my daughters to make back-up copies of all their schoolwork (to prevent a total loss if/when their school laptops crash) the inevitable happened, not to them but to me! In the most blatant case of hypocrisy I am ashamed to admit to not following my own advice.

Two days before the deadline for material for the March 2003 copy of AR my PC crashed and all my DX Notes information and files were lost. I will not dwell here on the names and comments rained down upon me from those who must be obeyed (both young and not so young) suffice to say that very few were charitable. Be assured that I have learned the hard way and a back-up copy of all my DX Notes files is generated every time something is added or deleted.

The 160 metre band has been very quiet despite regular monitoring at all hours of the evening. I did manage to hear RK4UWA who was 549 with me on 1823kHz at 18.19z on the 15<sup>th</sup> of February. I called him a few times but could not get him to answer me, pity. My best DX so far on 160 is Tom W8JI who has given me a 559 a couple of times. Tom has an excellent set-up for 160m so it's probably due more to his stations' abilities than mine. Bob, VK3ZL, in Merino manages to work quite a few stations on 160m and he is always 599++ with me in Montrose and I suspect he has a pretty reasonable antenna. Perhaps I should ask him for some advice on antennas for 160 metres.

Now that we are heading into our autumn and winter months propagation should begin to pick up a bit. As I am always on the look out for information about DX contacts made from VK please have a go at chasing some DX on the bands and drop me a line if you manage to work something interesting.

Remember, a contact with a DX station (whether a rare entity or simply extremely distant) may be passe to some experienced operators. However, please

be mindful of the newcomers to the DX game who are just starting out and who will appreciate all the encouragement and support they can get.

Sometimes just knowing that a DX location can be worked from VK on a certain band at a certain time can be a great encouragement to beginners. So please do a bit of DX'ing and drop me a note to let me know what you work so I can write it up. Hear you on the bands.

## The DX

**3D2, FIJI.** Brian, N6IZ, is planning to be active from the island of Namotu (OC-121) using the call 3D2IZ from the 26<sup>th</sup> of March until the 6<sup>th</sup> of April. He will be operating mainly CW on all bands 80 – 10 metre. QSL to N6IZ via bureau or direct CBA. [TNX N6IZ and OPDX]

**3D2, FIJI.** Tad, JF6OJX, will be operating from Mana Island (OC-121) as 3D2JX from the 19<sup>th</sup> till the 24<sup>th</sup> of April. His equipment will consist of a FT-897 and various wire antennas. Activity will be on the HF bands, 80-30 metre (where he will listen especially for European stations) and also on 20-6 metre. Tad will also try 160 m if he can manage it. QSL via JN1HOW. [TNX JF6OJX and OPDX]

**8Q, MALDIVES.** Ivan, 8Q7VR, is on the air from Maldives (AS-013) and will be there until May. QSL via UR9IDX. [TNX RL3AW and 425 DX News]

**9H, MALTA.** Gaby, OE8YDQ, and Chris, OE8CIQ, will be holidaying on Malta over the 20<sup>th</sup> until the 27<sup>th</sup> of April. On holiday, they will be operating on the HF bands 80 – 10 metre using SSB and CW when not 'otherwise occupied'. They intend to use their homecalls/9H unless they are successful in their applications for visitor's call signs. Equipment will be 100 watt to a vertical antenna. QSL via the bureau or direct CBA. [TNX OE8YDQ and 425 DX News]

**9L, SIERRA LEONE.** Zbig, SP7BTB, has recently returned to Sierra Leone from a holiday in Poland and is now back on the air again as 9L1BTB. He is active on 160 metres normally after 2130Z (probably an unfavourable path to VK) but just in case listen between 1828-1831 kHz. His activity is also

dependent on the town's sporadic electricity supply. His equipment consists of an IC706, Emtron DX1B linear and a dipole 13 metre above ground level. No QSL route given but check QRZ etc. [TNX SP7BTB and OPDX]

**9Q, DEM. REPUBLIC OF CONGO.** Pat, 9Q1A/2, and Nicole, 9Q1YL/2, report that their applications to renew their licenses has been successful so they will continue to operate until July. The pair will pursue the DX from their new QTH in Matadi. [TNX La Gazette du DX and 425 DX News]

**9Y, TRINIDAD & TOBAGO.** Sigi, DL7DF, will be active as 9Y4/DL7DF while on holiday over the period of the 23<sup>rd</sup> of March until the 10<sup>th</sup> of April. He will be QRV on all bands using CW, SSB, RTTY, PSK31 and SSTV. Equipment is a 100 watt transceiver and a linear amplifier. [TNX DL7DF and OPDX]

**A3, TONGA.** Irina, DL8DYL; Reinhard, DL8YRM; Thomas, DL5LYM; Wolfgang, DL4WG and Ralf, DL9DRA will be on air from the 17<sup>th</sup> of March until the 5<sup>th</sup> of April. QSL Manager for the group is DL8YRM. QSL via the bureau or direct CBA. [TNX DL8YRM and OPDX]

**D8, SOUTH SHETLAND ISLANDS.** Lee, DS4CNB, is operating as D88S from the South Korean Antarctic base 'King Se-Jong' on King George Island (AN-010). He will be there until about November 2003 and is on air quite often. Lee has been worked on all bands from 40 – 10 metre using CW and SSB. QSL via DS4CNB. [TNX DS4CNB and OPDX]

**F, FRANCE.** Franck, F5JOT; Daniel, F5LGQ and Claude, F6CKH are planning to be QRV from the Chausey Islands (EU-039) from the 19<sup>th</sup> until the 26<sup>th</sup> of April. Active on all bands 80 – 10 metre using CW and SSB with a strong possibility of RTTY and SSTV too. QSL via their home calls. [TNX F6AJA and 425 DX News]

**F, FRANCE.** Jean-Marc, F5SGI, will be QRV from Groix Island (EU-048) on 80 – 10 metre, CW only, signing TM6ILE. He will be on the island over the period of the 7<sup>th</sup> until the 12<sup>th</sup> of April. QSL to his homecall direct CBA or via the bureau. [TNX F5NQL]



## How's DX?

**H4, SOLOMON ISLANDS.** Bernhard (DL2GAC, H44MS) has returned to the Solomon Islands and will be there until late April. He is still recovering from malaria so his time on air may not be as extensive as he would like. Have a listen for him and call to cheer him up. [TNX DL2AGC/H44MS & 425 DX News]

**HL, SOUTH KOREA.** Seasoned traveler Mirek (ex 7X0DX, 9V1XE, VK6DXI, VK3DXI, 9M8DX) is currently QRV as HL5/VK2DXI from Pohang, South Korea until mid May and will be concentrating on the lower HF bands. QSL via DS5UCP. [TNX HL5/VK2DXI and 425 DX News]

**ISO, SARDINIA.** Freddy, IZ1EPM, will be QRV from Santa Teresa di Gallura, Sardinia (EU-024) from the 19<sup>th</sup> of April until the 2<sup>nd</sup> of May on 40 – 10 metre, leaning towards 30 metre. QSL to IZ1EPM, direct CBA or via the bureau. [TNX IZ1EPM and 425 DX News]

**PY0, BRAZIL.** Joca, PS7JN, is planning to return to St. Peter and St. Paul Rocks (SA-014) in the first half of April on 40, 20, 15 and 10 metre using SSB and RTTY and other modes/bands depending on equipment availability. No QSL route was given but perhaps it can be found on his web page at <http://www.qsl.net/ps7jn> [TNX PS7JN and 425 DX News]

**VP5, TURKS and CAICOS ISLANDS.** Rodger, GM3JOB and Willie, GM4ZNC will be active again as VP5/homecalls from North Caicos (NA-002) from the 5<sup>th</sup> until the 9<sup>th</sup> of April, QRV on most HF bands using SSB and CW. QSL to their home calls, either direct CBA or via the bureau. [TNX GM4ZNC and 425 DX News]

**ZS, SOUTH AFRICA.** Phil, G3SWH; David, G3UNA; Vidi, ZS1EL; Kosie, ZS1SR; Malcolm, ZS1MC; Andrew, ZS1AN and Hester, ZS1ESU will be QRV from Robben Island (AF-064) from the 4<sup>th</sup> until the 7<sup>th</sup> of April. The group will be using the callsign ZS1RBN and plan to have separate running 24 hours a day on all HF bands 40 – 10 metre using SSB and CW. QSL to G3SWH, either via the bureau or direct to Phil Whitchurch, 21 Dickensons Grove, Congresbury, Bristol BS49 5HQ, England. [TNX G3SWH and 425 DX News]

**J3, GRENADA.** Bill, VE3EBN, will be on air as J37LR from Grenada, from the 31<sup>st</sup> of Jan until the 2<sup>nd</sup> of April operating

on all bands 80 – 10 metre using CW and SSB. QSL via VE3EBN. [TNX NG3K and 425 DX News]

**ZK1, SOUTH COOK ISLANDS.** June, VK4SJ and Doug, VK4BP are off to two IOTA entities during April and May. They will be callsigns ZK1AYL and ZK1SIM respectively and will be on 40 – 10 metre SSB. Their plans are Aitutaki (OC-083) 27<sup>th</sup> April until the 14<sup>th</sup> May and Rarotonga (OC-013) 15<sup>th</sup> May until the 26<sup>th</sup> May. QSL to VK4SJ via the bureau or direct to June Sim, P.O. Box 406, Caloundra 4551, Queensland. June notes that electronic QSL's (e-QSL's) will not be accepted. [TNX VK4SJ, VK4BP and 425 DX News]

## Special Events

The 'European Year of the Disabled' will be commemorated by the special event callsign II1D. Carlo, IZ1CCE, and other Italian amateurs will put this special event call to air throughout 2003. (Why restrict it to a 'European' event? I think that disabled persons throughout the world would approve of part of this!) QSL to IZ1CCE either via the bureau or direct to Carlo Sobrito, Via I Maggio 9, 10051 Avigliana - TO, Italy. [TNX IZ1CCE and 425 DX News]

## Celtic Connections

The GMDX Group brings to light an event entitled 'Celtic Connections'. This event is designed to encourage on air activity by having radio amateurs all over the world contact amateurs in the geographical areas associated with the origins of the Celtic race.

These traditionally being Galicia and Asturias (Spain), Ireland, Brittany (France), Cornwall (England), Isle of Man, Northern Ireland, Scotland, Wales and Nova Scotia (Canada), [The Celts were Europe for at least 2000 years prior to the discovery of the Canadian East Coast, so how Canada is classed as an origin point is beyond me!].

This is not a contest, rather an 'activity weekend' to allow participants the chance to qualify for the Celtic Knot Award and to promote an interest in Celtic origins. The GMDX Group indicates "the event is to be held on the third weekend of April every year.

Reports on activity will be welcome and certificates of participation will be awarded to all who submit a report. If

sufficient interest and reports are received the leading participants from Celtic and non-Celtic areas will be awarded an engraved Quaich" (a small Scottish drinking cup to the non initiated [and don't call me James Bond!])

The 2003 Weekend will start at 0000z on Saturday the 19<sup>th</sup> and finish at 2400z on the 20<sup>th</sup> of April.

Activity is encouraged on all HF bands by Full calls, Novices and Club Stations (especially if a special event callsign could be obtained) in the following areas;

CT Trás-os-Montes region  
EA1 Galicia & Asturias areas of Spain  
EI Republic of Ireland

F Brittany area of France, (Departments; 22 - les Cotes d'Armor, 29 - le Finistere, 35 - l'Ille et Vilaine, 56 - le Morbihan) and Department 44 - la Loire Atlantique

G Cornwall area of England

GD Isle of Man

GI Northern Ireland

GM Scotland

GW Wales

VE1 Nova Scotia area of Canada

Suggested operating frequencies (kHz)

CW	SSB
1.813 / 833	1.872 / 1.952
3.503 / 013	3.772 / 3.572
7.003 / 013	7.072
10.103 / 013	10.133
14.003 / 033	14.172 / 272
18.073 / 083	18.136 / 162
21.003 / 033	21.172 / 272, 21.133
24.893 / 903	24.936 / 972
28.003 / 033	28.472 / 572, 28.133

Further details can be sourced from: Mr. Drew Givens, GM3YOR, 5 Langhouse Place, Inverkip, PA16 0EW, Scotland, U.K. or from the GMDX Groups web site at [www.gmdx.org.uk](http://www.gmdx.org.uk)

## Special event—Cuba

Special event callsign hunters will be interested in a project that the Members of the Cuban Federacion de Radioaficionados de Cuba (FRC) are organising. Nine special event stations will be activated over the next nine months to commemorate the 150<sup>th</sup> anniversary of the birth of Jose Marti one of Cuba's national heroes.

The stations and special callsigns will be active from various Cuban locations that were significant in Jose Marti's life and are;



CO0J 8 - 9 February  
CO0O 8 - 9 March  
CO0S 11 - 13 April  
CO0E 10 - 11 May  
CO0M 14 - 15 June  
CO0A 12 - 13 July  
CO0R 9 - 10 August  
CO0T 13 - 14 September  
CO0I 11 - 12 October

QSOs will be confirmed automatically via bureau (no QSL required) and a special award will be issued to those who manage to work all of the nine stations. [TNX CO2QQ & 425 DX News]

## The Italian Marathon

Members of the Italian QRP Club (I-QRP) are organising their fourth HF Marathon. "This event is to encourage QRP activity and is open to all licenced amateurs and SWLs. The event will run from 0000z on the 1<sup>st</sup> of April until 2400z on the 31<sup>st</sup> of August." QRP operation is a technically challenging facet of amateur radio and the experience of making a contact half the way around the world using only a few watt (or few milliwatt) is unforgettable. For further details you can email Giovanni Zangara, IW0BET at iw0bet@amsat.org [TNX IW0BET and 425 DX News]

## DXpeditions

A DXpedition to Waldegrave Island East (OC-???, a new IOTA entity) will be mounted by a team of VK3 amateurs to celebrate the bicentennial of the discovery of the island by Matthew Flinders during his historic coastal exploration of Australia in 1802-03.

The team will consist of Tom Marlowe VK3ZZ, Peter Forbes VK3QI, Keith Proctor VK3FT and Jack Bramham VK3WWW and with David McAuley, VK3EW acting as the 'pilot' station. ACA has issued the team with the special callsign VI5WCP to mark the event.

Waldegrave Island is part of the South Australia State West Centre group and the team will be on air from the 17<sup>th</sup> until the 22<sup>nd</sup> of April on all bands 80 - 10 metre using SSB and CW. The commemorative QSL card will reflect the historical significance of Matthew Flinders' discovery. I will enhance your QSL card collection.

All the paperwork for access has been processed and a boat has been chartered. The QSL route is via Thomas Marlowe

VK3ZZ, P.O. Box 368, Leongatha, Victoria 3953, Australia, include a SSAE or alternatively via the bureau. Direct QSL cards not conforming to above will be returned via bureau. [TNX VK3ZZ]

FO/M, MARQUESAS ISLANDS (OC-027). Silvano/I2YSB, Flaviano/I2MOV, Marcello/IK2DIA, Adriano/IK2GNW, Giuseppe/IK2WXV, Carlo/IK1AOD and Andrea/IK1PMR (all experienced DXers and Contesters) will be QRV from mid April for about two weeks. They have applied for a FO callsign and are awaiting confirmation from the authorities.

They will operate CW, SSB, PSK and RTTY on all HF bands and also 6 metre. A beacon will be on air for propagation checks on 50105kHz. Three separate HF stations will use linear amplifiers and several antennas, with beams used on the higher bands.

More information about the DXpedition QTH, operators' profiles, equipment and sponsors can be found on I2YSB's Web page at: <http://digilander.libero.it/i2ysb/> [TNX I2YSB and 425 DX News]

## Round up

Jeff, VK6AJ, wrote to let me know that he has successfully received his QSL card from 5A1A (Tripoli, Libya) whom he worked in November 2001. Initially Jeff sent his card and IRC's to the supplied Tripoli address but no reply. Then he discovered that 5A1A had relocated to Germany and decided to try there. Jeff says "12 days later I received his QSL card via air-mail.

"I sent an e-mail to thank him and received a reply saying that he was aware of problems with mail in Libya, but that anyone who wrote to Germany would be sure of a reply. He asked if I would tell the other VKs this. The address is; Assid, Hardehauser Weg 4, 33100 Paderborn, Germany." So there we are, a happy result.

DP1ANF. Oleg, R1ANF, has been issued with the callsign DP1ANF for his upcoming visit to the Edward Dallman Laboratory located on King George Island in the South Shetland group. Oleg is planning to be on air beginning in early February. QSL via RK1PWA. [TNX DL5EBE and 425 DX News].

Roman, UT7UA, will southern wintering at the Vernadsky base (WABA

UR-01) on Galindez Island (AN-006). He says he is scheduled to arrive in late Jan or early Feb and will operate as VP8CTR as much as time permits. QSL via DL5EBE. [TNX DL5EBE and UT7UA]

The prefix IQ (India Quebec) is now issued by the Italian authorities as an ordinary club station prefix. For example, IQ4AD is now the permanent callsign for the Parma ARI Branch. As IQ is no longer a special prefix for individual Italian amateurs, those who have held an IQ contest callsign are able to modify their calls. Andrea, IV3SKB (ex IQ3X) can now use IU3Y in major contests, and The Monte Capra Contest Team, formerly IQ4A, can now use IR4A. QSL IU3Y via IV3SKB. [TNX IV3SKB and 425 DX News]

WARD AWARD. The World Amateur Radio Day (WARD) award commemorates world Amateur Radio Day which is celebrated by the IARU on the 18<sup>th</sup> of April each year. Sponsored by the Polish Amateur Radio journal MK QTC the award is supported by the Polish Amateur Radio Union. It is issued to licenced amateurs and SWLs for contacts between 00.00 and 24 UTC on the 18<sup>th</sup> of April.

To qualify for the award, stations will need 10 QSOs on the HF bands (or if you are in Europe that day you'll only need 5 QSOs on the VHF bands). Those interested in qualifying should send an application listing the QSO's prior to the 31<sup>st</sup> of May 2003 to Redakcja MK QTC, ul. Wielmozy 5b, 82-337 Suchacz-Zamek, Poland. The price of the WARD Award is 5 USD or 5 Euro. The full color award is A4 size and is quite colourful and attractive. For further information please e-mail Sylwester Jarkiewicz, SP2FAP, at [qtc@post.pl](mailto:qtc@post.pl)

## Sources

This month our thanks go to the following for the information in DX Notes. SP2FAP, IV3SKB, DL5EBE and UT7UA, DL5EBE, VK6AJ, I2YSB, VK3ZZ, IW0BET, CO2QQ, GM3YOR, IZ1CCE, VK4SJ, VK4BP, NG3K, G3SWH, GM4ZNC, PS7JN, IZ1EPM, HL5/VK2DXI, OE8YDQ, DL2AGC/H44MS, F5NQL, F6AJA, DS4CNB, DL8YRM, DL7DF, 9Q1A/2, SP7BTB RL3AW, JF6OJX, N6IZ, La Gazette du DX, 425 DX News, OPDX (BARF80) and The Daily DX.



# Mister Speaker! The President of the Radio Society of Great Britain!

That is almost how Bob Whelan (G3PJT at right) was introduced at a special general meeting of the ACT Division on Friday, March 7, 2003. Bob had come to Canberra to participate in the RSGB Commonwealth Contest from the home of Tex Ihasz (VK1TX) during the second weekend of March.

So as not to miss a golden opportunity to meet with and listen to the progenitor of the UK Foundation Licence (FL), the ACT Division invited Bob to speak to this subject for the benefit of the members. Burdened with a heavy schedule of meetings with the press, and consultations with WIA officials, Bob made himself available on the Friday, prior to the contest

Living in Cambridge with his wife, Rosemary, Bob has been a radio amateur for the last 40 years. But four years ago he decided to do something for Amateur Radio, seeing that the number of aspirant amateurs was dwindling down from a peak in 1982 to an ever decreasing number in 1998. Concluding that nobody from outside the society was going to do something about the diminishing interest in Amateur Radio, he developed the idea of an FL for those who knew nothing about the hobby, did not like mathematics and radio theory, or hated the idea of learning Morse code at speed. Overcoming some resistance to the idea, the RSGB Board decided to be pro-active and began to organise the FL project in conjunction with the Radiocommunication Agency (RA). This effort resulted in the specifications for an FL. Subcommittees were formed to write the text for the FL manual, others concentrated on providing publicity at clubs and schools, and others again worked out the cost of running classes, fees, and supporting those clubs without funds or premises. In the end, the fee for tuition was set at 15 pounds per student. One-third of this amount went to the club, one-third to the RSGB, and one-third to a fund to give support to unfinancial clubs or very small groups of tutors. Once the FL was launched, the results were astonishing. All the texts and instruction manuals were sold within the first three months. Presently, 6100 FL licences have been issued. Of these licence holders, 3150 had no background with AR, and 745 of these were under the age of 21. Three months

after getting their licence and developing a taste for ragchewing and DX operations, many of them decided to become members of the RSGB.

A side effect of all this activity is that just about all the second-hand radios have disappeared from the market, as well as Morse keys and buzzers. The RA has made spot-checks to see if the M3 licence holders are outputting more than the maximum 10 watts of RF. They appear to be satisfied with the result of these checks. This is not really surprising, given that one subject in the FL course is tuning, and matching the radio to the antenna. Above all, M3ers are staying with the clubs that taught them

While the FL initiative was being launched, the RSGB board also took the opportunity to commit itself to a new set of objectives for the Society:

1. Improving the public appreciation of Amateur Radio
2. Exploiting the Foundation Licence opportunity
3. Defending the allocated Amateur Radio spectrum
4. Keeping the members interested

All of these were difficult to implement because of a shortage of volunteers. But with a grand gesture on the part of the RA, a Radio Inspector's van was donated to the Society for conversion into an operational Hamshack. Sponsored by ICOM, Kenwood, AMSAT, HSBC Bank, Tennamast, and Waters & Stanton, the AR van was equipped with radios that are able to demonstrate numerous ways to communicate on the amateur bands using analog or digital modes on HF, VHF, UHF, and S-Band for orbiting, amateur satellites. The mobility of the AR van ensures that amateur radio can be taken to remote places such as High School science weeks, summer camps, marathons, car rallies, the Marconi Centenary, and other events with an educational aspect.

Bob added that the RA had issued two special licences,

one for use with the AR van that allowed visitors to speak on air (CB4FUN), and the other one for a special event on the grounds of Windsor Castle between May 29 and June 9 of 2002 (GB50). This last event called 'Reaching Out' attracted 20,000 visitors, and was co-sponsored by the Duke of Edinburgh, the patron of the Society.

A further attempt by the Society to educate and inform the public about AR is a permanent stand of amateur radio equipment in the National Space Centre. This stand is used to demonstrate how with relatively simple equipment, an amateur, orbiting satellite can be used to speak to another amateur half way across the world on VHF. Other equipment, including computers, use digital modes and S-band frequencies to communicate via satellites with radio amateurs right across Europe.

Bob made three other suggestions for keeping members interested. (1) Try to offer new and improved services, (2) Recognise and support a wide range of interests. (3) Urge amateurs to switch on their gear and make calls.

Emerging on the RSGB horizon are: Powerline use for communications - too bad if you are a nearby radio amateur, the 5 MHz - 4-year experiment, the outcome of WARC 2003 with difficult negotiation for 7 MHz; and Morse becoming optional, changes in callsign structure - with more characters, and the more positive attitude of CBers toward the FL.

To find out more about the FL, connect to the following Websites: [www.gb50.com](http://www.gb50.com) [www.gb4fun.org.uk](http://www.gb4fun.org.uk) [www.radio.gov.uk](http://www.radio.gov.uk) [www.rsgb.org](http://www.rsgb.org)

C:\My Documents\WIA VK1 Secretary\Forward Bias\Mister Speaker ... The President of the RSGB.doc





## Beyond Our Shores

David A. Pilley VK2AYD  
davpil@midcoast.com.au

### UK cell phones get the nod

A press release from the UK Department of Trade and Industry on the 18th of February gives the results of a new study of the emissions from mobile phone masts.

The Government study examined mobile phone masts at 109 sites across the UK. The study showed that readings ranged from hundreds to millions of times below international guidelines. The Government announced it would continue the study of masts in 2003. Telecoms Minister Stephen Timms said: "We are aware of public concerns and it is important to give the public the information they need. These results continue to show that exposure levels of the public are well below recommended limits." The exposure limits are set by the International Commission for Non-Ionizing Radiation Protection.

(GB2RS news)

### Singapore 9V- UHF approval

IDA have approved the following UHF spot frequencies for Amateurs in Singapore. 433.425MHz, 433.450MHz and 438.450 MHz. Maximum power 5 watts ERP. The SARTS UHF repeater should soon be in action Input (Rx) is 433.425 MHz and output 438.425MHz (TX). Contact Ian, 9V1WD for more information, email  
ian9v1wd@singnet.com.sg

(Q-News)

### Turkey

Sergei Rebrov, M0SDX, the Ukrainian international footballer who moved to Tottenham Hotspur in an 11-million deal in 2000, has moved to Turkish side Fenerbahçe. Sergei, whose Ukrainian callsign is UT5UDX, is a keen HF contester and has been very active as M0SDX from his home in Essex and from other locations in the British Isles over the last two years. He is now in the process of obtaining a Turkish callsign.

(GB2RS news)

### PSK 31 Euro Monitor

Do you want to see if your PSK-31 signal is being heard in Europe? Well now you can without the need to call CQ or arrange a contact. There is now a PSK-

31 real time receiver in Germany permanently tuned to 14.070 MHz. You simply log into the receiver's website and watch the display, which shows all signals near that frequency. Just like with your PSK-31 receiving software, you click on a yellow line and start decoding a signal. Apart from doing test transmissions, we anticipate that the facility will be useful for listeners who want to monitor amateur PSK. The receiver used is a TS-450 and the antenna is a 20 metre longwire. <http://www.hamradio-portal.com/psk/start.html>

(APC News)

### More on 5 MHz from Europe

A new on-air source of propagation data is now testing on 5195 kHz and being received with good signals across most of Europe. The callsign, DRA5, is a German commercial callsign because the station is operating outside the normal amateur bands. However, it is run by a team from DARC, the German national amateur radio society, and is co-located with the 10MHz beacon, DK0WCY. Like DK0WCY it transmits the latest solar data, refreshed every three hours, but with the addition of RTTY, bpsk31 and

*If you have interesting news from overseas, please e-mail to  
davpil@midcoast.com.au*

### Rej Allinson VK2MP

Rej Allinson VK2MP passed away on October 11, 2002 while in hospital preparing for surgery. Rej was a well-known and active member of the weak-signal community on 144MHz, 432MHz and 1296 MHz in south-eastern Australia.

Originally licensed as VK2MP, Rej moved to Canberra around 1970 and became VK1MP where he provided a big signal on two metres AM and CW into Sydney. Rej provided me with my first VK1 contact when I was operating with 10 watts of AM and CW on 144MHz. During the early-mid 1970s Rej stepped up to SSB on two metres and participated in many tests and skeds with stations in Sydney and northern VK3. He subsequently became a regular

qpsk31. Power is 30 watts to a dipole.

<http://www.keele.ac.uk/depts/por/psc.htm>

(RSGB news)

### Real DX Signals

Talk about weak-signal DX! NASA says that after more than 30 years; it appears the venerable Pioneer 10 spacecraft has sent its last signal to Earth. Pioneer's last, very weak signal was received on January 22. NASA engineers report Pioneer 10's radioisotope power source has decayed, and it may not have enough power to send additional transmissions to Earth. NASA's Deep Space Network (DSN) did not detect a signal during the last contact attempt February 7. The previous three contacts, including the January 22 signal, were very faint with no telemetry received. The last time a Pioneer 10 contact returned telemetry data was last April 27. NASA plans no additional contact attempts for Pioneer 10, which is 7.6 billion miles from Earth. At that distance, it takes more than 11 hours 20 minutes for the radio signal to reach Earth. More information is available on the Pioneer 10 Web page

<http://nssdc.gsfc.nasa.gov/nmc/tmp/1972-012A.html>.

(ARRL N/L)

## Silent Key

on the aircraft enhancement circuits opened up in the 1980s. In the late 1990s he moved to Murrumbateman, NSW, about 25 km west of Canberra and was active almost daily on 144, 432 and 1296 MHz as VK2MP. Rej put a fine signal into VK2 and VK3 and occasionally into VK5, VK4 and ZL when conditions were right.

Rej was also active on HF and six metres and was a well-known figure during the summer Es season.

Rej was a true amateur in that his working career in the plumbing trade had nothing to do with radio. He will be greatly missed by all of us.

Our sympathies are with his wife Elizabeth and two children.

Mike Farrell, VK2FLR



## The Western District Convention

There is a change of venue for this Convention. For the last few years it has been held in Bendigo but this year it has moved to Castlemaine.

It will be on the weekend after Anzac Day. Listen around for details of the venue, but make a note to go if you can. It is always a good 'do' and there will be lots of bargains for everyone. Remember someone else's junk is your treasure.

Go along and meet your friends. Castlemaine is a very central location for the VK3s and VK5s.

### It just worked. I don't know why

How often has a mistake led to an important discovery or invention? Many times. We came across one just recently. Because of a mistake in the quantity of a catalyst added to a plastic material a new type of plastic, one that conducts electricity was created.

Not just a little too much catalyst but a thousand times too much produced a silvery film instead of a black powder. Rather than waste the time and effort that had already been expended to get this far in the experiments it was decided to investigate the silvery film instead of to throw it away.

As the tests proceeded various other materials were added to see what happened. In fact, the electroscope being used to test the currents and/or voltages produced was wrecked by the sudden surge in energy with one addition.

The application of a plastic that behaves like a normal plastic substance except that it conducts electricity has many implications.

We should be watching for future developments from the collaboration between Australian, Korean and Japanese scientists in this new field.

(Thanks to the "New Scientist" of 22 Feb for this item)

### Further to the weather

As mentioned last month, one of the first topics discussed on the Monday ALARA Nets is the weather. It would seem that the drought has broken in most places (though not all, if the nude rain dances

outside Ouyen are anything to go by). It has certainly broken in Queensland. After several years when the monsoons did not bring the usual rains they brought it with a vengeance this year. June reported to the 14.222 Net at the end of March that she had had 26 inches of rain (over 660 mm). Perhaps Shirley VK5JSH could be excused for thinking June meant she had had that much rain so far this year. June meant she had had that much rain in the month of March! That is an unimaginable amount of rain for anyone living in the South, let alone someone born 12,000 miles away in the UK. You are forgiven, Shirley! The other VK4 girls have similar stories to tell, but none top that one

For those of us further down we were delighted to report falls of between 2 and 3 inches (50 and 75 mm), all that is except Marilyn VK3DMS. Although Marilyn does not grow sultanas any more she still has a feeling for those who do. Most of the crop in her area was completely spoiled. What the rain started the humidity that followed finished off.

Whether it is wet or dry the weather never pleases everyone!

### The time of the year for Contests

We hope you participated in the VHF fields days in Jan/Feb or John Moyle Memorial Field Day in March and we hope you 'had a go' in the CLARA AND FAMILY CONTEST in March or 'have a go' in the THELMA SOUPER MEMORIAL CONTEST in April.

Some of you may have joined the Canadian YLs in providing radio stations for Girls Guides in their GOTA (Guides on the Air) weekend as well. This is a relatively new activity to most of us although those of us at the ALARAMEET in Murray Bridge may have heard something about it from Norma VK2YL and OM Frank VK3AKG. They spent some time asking about YL participation in JOTA and GOTA. If you haven't done it before think about it next time. You never know when you could be asked.

### Luncheons

The VK5 luncheon at "Berties" on the second Friday of each month is still happening although the attendance has been poor since Christmas.

In VK3 there is still a problem with the usual venue but luncheons are still on. Get in touch with Bron VK3DYF or Gwen VK3DYL for information if you are going to be in Melbourne on the second Friday of the month.

In Perth the meeting is on the third Friday. They would also love to see any visitors to their beautiful city. Get in touch with Poppy VK6YF for details.

Dot would love to have a regular lunch in Sydney but there are not enough YLs near Sydney to make it happen. However, if you are ever in Sydney contact Dot VK2DB and she will meet you somewhere or invite you home.

### Thank goodness those bushfires are over

The rains have ended the terrible fires we had in January/February and thank Heavens for that. As always some strange stories come out of disasters.

Dot VK2DB and OM John VK2ZOI offered their services to the authorities and were asked to man the local airport where the heli-tankers were refueling. Then the rains came on the day they were to start!! Frustrating if pleasing.

Some of the fire-fighters were reported in the media as eating a recognised brand of fast food rather than other more healthy food. The reason for this was, in part, that the Red Cross and other service organisations were not prepared to make sandwiches etc for people who were being paid by the government (the fire-fighters were trained men who 'worked for the dole' during their university holidays in this way).

Some of them had done it for several years and fought a number of fires during that time. This seems to be a strange sort of discrimination, doesn't it? The fact is that they were being paid through the dole scheme rather than getting their 'normal' pay from their employers while acting as volunteer fire-fighters.



## Contest Calendar April - June 2003

Apr	5/6	SP DX Contest	(CW/SSB)	
Apr	11/13	Japan International DX Contest	(CW)	
Apr	19	Holyland DX Contest	(CW/SSB)	
Apr	19	TARA PSK31 Rumble		
Apr	19/20	YU DX Contest	(CW/SSB)	
Apr	25	Harry Angel Memorial Sprint	(CW/SSB)	(Mar 03)
Apr	26/27	Helvetia Contest	(CW/SSB)	
May	3	IPA Contest	(CW)	
May	3/4	10-10 Intl. Spring QSO Party		
May	3/4	ARI International DX Contest	(All)	
May	4	IPA Contest	(SSB)	
May	10/11	Volta RTTY DX Contest		
May	10/11	CQ-M International DX Contest	(CW/SSB/SSTV)	
May	16/17	Anatolian WW RTTY Contest		
May	17/18	King of Spain Contest	(CW)	
May	24/25	CQ WW WPX Contest	(CW)	(Mar 03)
May	24	VK/trans-Tasman Contest	(SSB)	(Apr 03)
May	31	QRP Day		
Jun	7	VK/trans-Tasman Contest	(CW)	(Apr 03)
Jun	7/8	ANARTS WW RTTY Contest		
Jun	7/8	WW South America Contest	(CW)	
Jun	14	Asia-Pacific Sprint	(SSB)	
Jun	21/22	All Asian DX Contest	(CW)	

## Greetings to all readers and contestants.

By the time you read these notes the WIA Federal AGM for 2003 will have just finished. As some of you will remember, so too has my time as Federal Contests Co-ordinator.

I take this opportunity to say a sincere thank you to all those who have taken part in contests in this country and who have supported me in the preparation of these notes over the years.

A special thanks must go to the Editors of "AR" over several years — for a while Bob Harper and more recently Colwyn Low. Theirs is not an easy task having to marshal information each month and get it ready for publication. Thanks chaps.

My years in this position have been most interesting indeed. When I started I was of the "old school" that set about honing one's skills in order to log those contacts and get them down on paper.

At one time I was roundly taken to task for such an old-fashioned approach and

not bringing before the readers modern information to help you to do even better by taking advantage of modern technology.

Whilst at first this produced an adverse emotional reaction in me, nevertheless these criticisms achieved what such remarks ought to achieve — they drove me to explore this "modern technology", and this, in turn, led me to see that once into the world of computerised logging, there was indeed much satisfaction to be gained with less physical drain on one's energies.

Contesting does not rate as the favourite pastime of amateurs in Australia, but it is certainly not dying and almost gone. I do urge you yet again to take your part in the contests, both here in VK during our winter months and in the World-wide events. They are occasions when satisfaction and fun can be had, as well as receiving certificates if your efforts have earned them.

Until there is an announcement about who may take up the position of Federal Contests Co-ordinator, please continue to send any information to me.

Once again, thank you all. I still look forward to hearing you on air in the contests.

73, Ian Godsil VK3VP/VK3JS

## Results Seanet Contest 2002 (VKs only)

Place	Call	Section)
1st	VK6SWA (Seanet Team)	MO/MB/ SM
2nd runner-up	VK8HA	SO/MB/ SM
1st	VK8AA/M	SO/SB/ SM 7CW
1st runner-up	VK6ADI	SO/SB/ SM 14 SSB



# Summer VHF-UHF Field Day 2003: Results

Contest manager: John Martin VK3KWA

Call	Name	Locator(s)	6 m	2 m	70 cm	23 cm	12 cm	9 cm	6 cm	3 cm	TOTAL
<b>Section A: Single Operator, 24 Hours</b>											
VK3WRE	R. Edgar	QF31	110	633	930	928	840	700	700	830	5671
VK3AEF	J. Bywaters	QF03	80	555	645	384	-	-	-	-	1664
VK4OE	D. Friend	QG61, 62	-	336	420	360	-	-	-	220	1336

## Section B: Single Operator, 6 Hours

VK3KAI	P. Freeman	QF21,22,30,31,32	77	324	530	608	650	540	430	540	3699
VK3BRZ	C. Gnaccarini	QF21	-	507	715	432	350	-	-	-	2004
VK3AXH	I. McDonald	QF12	110	441	630	512	-	-	-	-	1693
VK3UH	L. Mostert	QF21	79	246	390	340	-	-	-	-	1055
VK3HV	G. Francis	QF21	79	243	380	-	-	-	-	340	1042
VK3AFW	R. Cook	QF22	107	441	490	-	-	-	-	-	1038
VK5DQ	K. Gooley	PF95	40	138	205	264	-	-	-	-	647
VK5ZUC	A. Russell	PF94, 95	33	213	345	-	-	-	-	-	591
VK3QB	C. Chapman	QF32	101	234	231	-	-	-	-	-	566
VK5JQ	J. Sayers	PF95	38	138	195	184	-	-	-	-	555
VK3KG	P. Elton	QF22	68	282	180	-	-	-	-	-	530
VK5UE	C. Low	PF95	-	123	185	192	-	-	-	-	500
VK5AR	A. Raftery	QF04	21	157	230	-	-	-	-	-	408
VK3BJM	B. Miller	QF22	58	336	-	-	-	-	-	-	394
VK5XE	I. Northeast	PF96	33	102	165	-	-	-	-	-	300
VK4EV	R. Everingham	QG62	-	114	175	-	-	-	-	-	289
VK4LP	J. Lemura	QG62	-	41	40	-	-	-	-	-	81

## Section C: Multi Operator, 24 Hours

VK3ATL	GARC (1)	QF22	198	768	910	928	490	-	-	-	3294
VK2TWR	(2)	QF43	150	693	815	440	-	-	-	-	2098
VK5ARC	SCARC (3)	PF94	224	555	520	-	-	-	-	-	1299
VK5BAR	AHARS (4)	PF95	183	393	415	176	-	-	-	-	1167

## Section D: Multi Operator, 6 Hours

VK3BG	(5)	QF24	112	492	605	616	-	-	-	-	1825
VK3APC	MDRC (6)	QF22	92	417	545	-	-	-	-	-	1054
VK3BSY	(7)	QF21	-	249	-	-	-	-	-	-	249

## Section E: Home Station, 24 Hours

VK3FMD	C. Kahwagi	QF22	-	486	795	800	480	220	220	-	3001
VK3EK	R. Ashlin	QF32	130	522	720	512	340	220	230	230	2904
VK3AUI	G. Sones	QF22	124	297	460	488	-	-	-	-	1369
VK3AFW	R. Cook	QF22	-	417	680	-	-	-	-	-	1097
VK5USB	R. Pipe	PF95	64	171	225	168	-	-	-	-	628
VK3BJM	B. Miller	QF22	35	177	235	-	-	-	-	-	447
VK5AIM	S. Mahony	PF95	24	117	150	96	-	-	-	-	387
VK5HKT	K. Thole	PF95	-	150	225	-	-	-	-	-	375
VK1WJ	W. Jirgens	QF44	45	138	175	-	-	-	-	-	358
VK2CZ	D. Burger	-	53	-	195	-	-	-	-	-	248
VK3JQ	I. McLean	QF22	46	69	110	-	-	-	-	-	225
VK2JHN	W. Munn	QG61	103	-	-	-	-	-	-	-	103

### Check Logs:

Thanks to W. Memphis VK2KWM, P. Pavey VK3VB, M. Millar VK5MX, P. Loveridge ZL1UKG.

- (1) Geelong ARC: operators VK3YXK, VK3HFX, VK3BCL, VK3HFX, VK3XLD.
- (2) Operators VK2TWR, VK2XKE, VK2IJM.
- (3) South Coast ARC: operators VK5KBJ, VK5PCY, VK5HSX, VK5KDO, N. Parr.
- (4) Adelaide Hills ARC: operators VK5PH, VK5BV, VK5DC.
- (5) Operators VK3BG, VK3AHY, VK2RO, VK3KLN.
- (6) Moorabbin & District ARC: operators VK3YE, VK3OR, C. Long.
- (7) Bellarine Secondary College: operators VK3TRD, A. Bent, C. Lewis.

Activity in this Field Day was quite high, in spite of the hot weather and fire restrictions in some areas that forced some stations to restrict their operation. A number of stations submitted logs for the first time this year, especially in the 6 hour and home station sections. Thanks to all for supporting the Field Day and helping to increase the activity.

A few months ago there was some e-mail discussion of possible rule changes. There was some concern that the scoring advantage of microwave stations and grid hoppers could discourage others who don't have microwave gear or may not be able to activate more than one grid square. But the logs show that there has been a significant increase in activity, so maybe the rules don't need fixing.



But I would appreciate comments about grid hopping. At present there is no limit to the number of grids that any station can activate, and this means more effort, more driving and lost operating time. Would be a good idea to have a limit on grid hopping - say no more than two squares? There may be many amateurs who can find two different sites within reasonable driving distance, but there are only a lucky few who happen to live within a reasonable distance of a four-grid intersection. A limit of two grids could reduce the pressure and create a more level playing field. It could even lead to more grid hopping stations.

Any comments on this or any other aspects of the rules are welcome. E-mail [jmartin@xcel.net.au](mailto:jmartin@xcel.net.au).

A correction to the results for the November 2002 Field Day: VK3AEF operated from QF04 and the fourth operator listed should be W. Day, VK3SWD.

## VK/trans-Tasman Competition - Rules

### Contest web-site:

<http://home.iprimus.com.au/vktasman>

### Helpful Hint:

( Particularly regarding "Scoring"):

These Rules cover a variety of Operator circumstances, so jot down or highlight those parts that are applicable to you.

### Contest Date:

PHONE: (Cat 1, 2 and 5):

Saturday 24th MAY

CW:(Cat 3 and 4):

Saturday 7th JUNE

Time: 0800 UTC to 1400 UTC,  
( in 6 one hour stages ).

## Aims of Contest:

- to provide a reasonably short event that doesn't impose overly on family or sleep time, while giving 6 hours of constant on-air activity.
- to have a fair scoring system that:
  - compensates for geographical location ; usable band time and the difference in participation numbers between VK's and ZL's, to provide, so far as is possible, a level playing field for all.
  - to place main emphasis on VK/ZL contacts, by awarding bonus points for "trans-Tasman" contacts.

- to provide incentive for the clever Operator, by awarding additional bonus points for working groups of "call-areas" in any one hour.
- to promote/give recognition to QRP operators and SWLs.

## General:

- The Contest is open only to all VK and ZL callsigns.
- The Contest shall be in 6 X 1 hour stages, and stations can only be reworked after the commencement of each hour. However, stations worked during the 5 minutes before the hour, cannot be reworked until 5 minutes after the hour.
- Sequential numbers commencing at 001, shall be given and received for all contacts made during the Contest.

(Use of RST numerals is NOT required).

Note: Contest details; Rules and a suitable log sheet are available on the Contest web-site:

<http://home.iprimus.com.au/vktasman>

Any queries or constructive criticism should be attached to the log, or e-mailed to: [vktasman@hotmail.com](mailto:vktasman@hotmail.com)

**Band:** 80 metre band.

### Frequencies:

**Phone:** 3.535 to 3.625 MHz.

**CW:** 3.500 to 3.550 MHz.

Note: It is not in the spirit of the Contest to "park" on a frequency. While this will not be policed, 20 minutes is considered to be the maximum time between QSYs.

**Modes:** LSB ( DSB optional for QRP ), CW.

**Max.** TX Pwr: LSB: 100 watts pep. ( QRP 5 watts pep, LSB or DSB ).

**CW:** 100 watts pz. ( QRP 5 watts pz ).

## Categories:

- |        |   |
|--------|---|
| Cat 1. | Single Operator - Phone.                                    |
| Cat 2. | Single Operator - QRP Phone. (Also eligible to enter Cat1). |
| Cat 3. | Single Operator - CW  |
| Cat 4. | Single Operator - QRP CW. - (Also eligible to enter Cat 3). |
| Cat 5. | Shortwave Listener - (SWL).                                 |

## Multi-operator:

- Club/Group stations shall be permitted to enter Category 1 only, on the proviso that only ONE Operator is used in each 1-hour segment, to perform ALL functions without assistance. ( ie: TX/RX; log and time keeping ).
- Club/Group stations must score at least 100 points more than a Single Operator station, to have outright claim to any prize - (incl. The VK/trans-Tasman Trophy).  
If the leading margin is less than 100, a Certificate(s) will be shared equally with the Single Operator Station, but the Trophy will be awarded to the Single Operator Station only.

## Callsigns:

- VK4s north of the Tropic of Capricorn shall add "Central" after the suffix of their callsign, for all contacts.
- QRP stations shall add "Quebec" after the suffix of their callsign, for all contacts.

## Scoring:

- The final score shall be the sum of the five (5) highest scoring hourly segments, with the lowest scoring hourly segment not counted.

Note: This gives the ZLs the option of working only 5 hours, if they choose not to stay up until 2am to try to improve their score.

It gives VK6s (with 3 hours competition after 7pm ), 5hrs to complete a full Log, if they choose not to start until 5pm to avoid poor propagation after 4pm./0800 UTC.

- VK shall be divided into 3 zones (for scoring purposes):  
"East" = VK1, VK2, VK3, VK4 (south of Tropic of Capricorn), VK7 and VK9.

"Central" = VK4 (north of Tropic of Capricorn); VK5 and VK8.

"West" = VK6 and VK0.

- VK to VK ( except VK/East to VK/ West ) = 3pts  
VK/East to VK/West = 3pts + 3 (distance) = 6pts  
VK/East to ZL = 5(distance)+1(band time)+5(bonus) = 11pts  
VK/Central to ZL = 7(distance)+2(band time)+5(bonus) = 14pts



VK/West to ZL  
 $= 10(\text{distance}) + 5(\text{band time}) + 5(\text{bonus}) = 20\text{pts}$

d). ZL to ZL = 3pts

ZL to VK/East = 5 (distance) + 5 (bonus) = 10pts

ZL to VK/Central = 7 (distance) + 5 (bonus) = 12pts

ZL to VK/West = 10 (distance) + 5 (bonus) = 15pts

(ie: 5 bonus points awarded for each trans-Tasman contact)

- e). During each 1 hour segment, additional bonus points shall be awarded as follows.

VK working 4 X VK call area's (CA's) = 20 bonus points (BP)

VK (East) working 3 X ZL CA's = 30 BP

VK (Central) working 3 X ZL CA's = 40 BP

VK (West) working 2 X ZL CA's = 40 BP

ZL working 3 X ZL CA's = 18 BP

ZL working 3 X VK (East) CA's = 30 BP

ZL working 2 X VK's from VK (Central)/VK (West) combined = 30 bonus points

Note: "Call Areas" are identified by the numeral in the callsign.

If more than one required "group" of call areas are worked in any hourly segment, bonus points are awarded for each "group".

(eg: VK/East working 3 X ZL call areas, twice in one hour = 60 pts).

- f). QRP to Base St'n = 2 bonus points  
 Base St'n to QRP = 2 "

QRP to QRP Stn = 4 bonus points to each party.

QRP using personally home-brewed RX & TX = 1 bonus point per contact.

- g). SWLs shall score as for Amateur stations, except scores shall be calculated for both stations in each QSO, and included in total score. To score, the callsigns and contact numbers of both stations in a QSO must be received and logged.

Note: "Participation Factor" (to be applied by Contest Manager): As the number of participants on either side of the Tasman has a direct effect on the ability to score bonus points, a compensating factor shall be applied to all overseas "call-area" bonus points scored by the Country with the lowest number of "participants". - The factor is the "lowest number of "participants", divided by the "highest number of participants". (

"participants" being the number of different stations compiled from all Logs received ).

eg: 50 ZL's divided by 150 VKs = compensating factor 0.33.

All ZLs overseas "call area" bonus points X 0.33.

## Logs: -

- a). A separate Log shall be submitted for each Category entered, except that QRP Logs may be used for other eligible Categories.

- b). A new log sheet shall be used at the commencement of each hourly segment, with hourly "contact" sub-totals and "call area groups bonus" shown at the bottom. Number each Log sheet (eg: 2 of 6).

- c). For each contact, logs shall record callsign of station worked; numbers given and received, and UTC time. To the right, leave columns for "contact" points. At the bottom provide space to record hourly "contact" sub- totals; bonus point sub-totals, and "hourly total". (Calculate scores after the Contest).

- d). If six (6) hours are contested, the Log sheet for the lowest-scoring hourly segment shall still be submitted for cross-checking, but shall be indicated as "not included in final score" by writing "LOWEST SCORING HOUR" on top of the relevant page(s).

- e). Logs, or log entries that are not clearly legible, in the opinion of the Contest Manager, shall not count.

## Log Summary:

- a). Logs shall be accompanied by a separate Log Summary showing the Operator's Callsign; Name; Address; email address (if available); Categories entered, and total points score claimed.

- b). VK4s in "Central" zone shall identify as such at the top of their Log Summary sheet, by writing "Central" after their callsign suffix.

- c). QRP stations claiming points for "personally home-brewed" TX and RX equipment, shall indicate accordingly on their Log Summary. It will be assumed that all entrants submitting logs will have contested in compliance with the Rules. - Logs submitted without a "Log Summary" may not be counted.

## Lodgement

- a). Logs must be received either by post, to:

VK/ trans-Tasman Contest,  
 28 Crampton Crescent,  
 Rosanna, VIC. 3084  
 AUSTRALIA.

or, by e-mail to: < vktasman@hotmail.com in either "Word 2000" (or earlier); or "Text File" (Notepad or Wordpad) formats.

- b). Closing Date for receipt of Logs shall be

0700 UTC, 20th June, (Phone Logs and SWL).

0700 UTC, 4th July, (CW Logs).

Operators are requested to submit their logs (even if you don't think you will win ). This will justify the effort and expense involved by the Contest Manager, and ensure the on-going success of the Contest.

Awards: VK/trans-Tasman Trophy: Highest Score (ref: "Multi-Operator").

Certificate:	1st	Phone Score
Certificate:	2nd	Phone Score
Certificate:	3rd	Phone Score
Certificate:	1st	QRP/Phone score
Certificate:	1st	CW score
Certificate:	2nd	CW score
Certificate:	3rd	CW score
Certificate:	1st	QRP/CW score
Certificate:	1st	VK
Certificate:	1st	ZL
Certificate:	1st	SWL Score
Certificate:	(Night-owl's award): Top Phone score in final hour	
Certificate:	(Night-owl's award): Top CW score in final hour	
Certificate:	(Wooden Spoon award): Lowest Log score submitted.	

## Publication of Rules/Results:

- a). Rules will be published in the WIA "AR" and NZART "Break-in" Magazines. Also on Contest web-site; Contest Calender, and possibly on the WIA and NZART web-sites.
- b). Results will be published in "AR", "Break-in" and if possible, in "Radio & Communications"
- c). The Results will be published on the Contest web-site by the following dates:

**Phone mode and SWL:**

25th June, 2003.

**CW mode:**

9th July, 2003.



# Ross Hull Memorial VHF-UHF Contest 2002 - 2003: Results

Contest manager: John Martin VK3KWA

This year Rob VK3EK made a comeback in the seven day section and narrowly toppled Glenn VK4TZL, but Glenn won the two day section. Congratulations to both - each of them has now won the contest twice. Congratulations also to all other entrants.

One good sign this year was an unusually high number of first-timer logs. I hope this is a sign that activity is on the way up again. But we still have a long way to go before we get back to the same level of activity that we had years ago. There are plenty of stations out

there with DX capability, but the contest has been in the doldrums for some years now. Maybe it is time for some radical changes. I'll try anything that would stand a chance of encouraging more stations to get on the air. Any suggestions?

## Ross Hull Contest 2002 - 2003: Results

Call	Name	6 m	2 m	70 cm	23 cm	12 cm	9 cm	6 cm	3 cm	TOTAL
<b>Section A: Best 7 Days</b>										
VK3EK	R. Ashlin	113	876	1010	616	290	140	170	170	3385
VK4TZL	G. McNeil	1645	885	735	96	-	-	-	-	3361
VK3AFW	R. Cook	35	891	750	-	-	-	-	-	1676
VK3AEF	J. Bywaters	75	426	585	128	-	-	-	-	1204
VK3KAI	P. Freeman	10	216	215	72	70	70	70	110	833
VK2TG	R. Demkiw	261	252	220	-	-	-	-	-	733
VK3HV	G. Francis	69	189	210	16	20	20	20	60	604
VK4ACB	W. Millwood	106	165	145	104	-	-	-	-	520
VK3ZUX	D. Johnstone	21	203	280	-	-	-	-	-	504
VK2CW	G. Smith	-	75	-	-	-	-	-	-	75
VK5HKT	K. Thole	-	45	15	-	-	-	-	-	60
VK2TRA	R. Archer	-	21	-	-	-	-	-	-	21
VK2CZ	D. Burger	Check log								

## Section B: Best 2 Days

VK4TZL	G. McNeil	1368	246	205	32	-	-	-	-	1851
VK3EK	R. Ashlin	61	435	575	280	100	80	80	100	1711
VK3AFW	R. Cook	35	426	445	-	-	-	-	-	906
VK3AEF	J. Bywaters	45	198	320	88	-	-	-	-	651
VK3KAI	P. Freeman	7	165	165	40	30	30	30	70	537
VK3HV	G. Francis	32	99	135	16	20	20	20	50	392
VK3BG	E. Roache	9	21	165	104	-	-	-	10	309
VK2TG	R. Demkiw	56	135	105	-	-	-	-	-	296
FK8CA	A. Gouillard	282	-	-	-	-	-	-	-	282
VK3AUI	G. Sones	27	84	105	64	-	-	-	-	280
VK4ACB	W. Millwood	83	84	70	24	-	-	-	-	261
VK6ADI	B. Burns	83	-	-	-	-	-	-	-	83
VK3JS	I. Godsil	16	21	35	-	-	-	-	-	72
VK2CW	G. Smith	-	24	-	-	-	-	-	-	24
VK5BWA	M. Mitchell	10	-	-	-	-	-	-	-	10

## Ross Hull Contest: List of Winners, 1950 - 2003

'50 - '51	VK5QR	R. Galle	'68 - '69	VK5ZKR	C. M. Hutchesson	'86 - '87	VK3ZBJ	G. L. C. Jenkins
'51 - '52	VK5BC	H. Lloyd	'69 - '70	VK3ZER	R. W. Wilkinson	'87 - '88	VK5NC	T. D. Niven
'52 - '53	VK4KK	A. K. Bradford	'70 - '71	VK4ZFB	E. F. Blanch	'88 - '89	VK5NC	T. D. Niven
'53 - '54	VK6BO	R. J. Everingham	'71 - '72	VK5SU	J. W. K. Adams	'89 - '90	VK3XRS	R. K. W. Steedman
'54 - '55	VK4NG	R. Greenwood	'72 - '73	VK5SU	J. W. K. Adams	'90 - '91	VK3XRS	R. K. W. Steedman
'55 - '56	VK3GM	G. McCullough	'73 - '74	VK5SU	J. W. K. Adams	'91 - '92	VK3XRS	R. K. W. Steedman
'56 - '57	VK3ALZ	I. F. Berwick	'74 - '75	VK5SU	J. W. K. Adams	'92 - '93	VK3XRS	R. K. W. Steedman
'57 - '58	VK3ALZ	I. F. Berwick	'75 - '76	VK5SU	J. W. K. Adams	'93 - '94	VK3XRS	R. K. W. Steedman
'58 - '59	VK3ALZ	I. F. Berwick	'76 - '77	VK4DO	H. L. Hobler	'94 - '95	VK3XRS	R. K. W. Steedman
'59 - '60	VK4ZAX	D. R. Horgan	'77 - '78	VK3OT	S. R. Gregory	'95 - '96	VK2FZ/4	A. Pollock
'60 - '61	VK3ARZ	W. Roper	'78 - '79	VK4DO	H. L. Hobler	'96 - '97	VK2FZ/4	A. Pollock
'61 - '62	VK5ZDR	M. J. McMahon	'79 - '80	VK3ATN	T. R. Naughton	'97 - '98	VK2FZ/4	A. Pollock
'62 - '63	VK4ZAX	D. R. Horgan	'80 - '81	VK6KZ	W. J. Howse	'98 - '99	VK3XPD	A. P. Devlin
'63 - '64	VK5ZDR	M. J. McMahon	'81 - '82	VK6KZ	W. J. Howse	'99 - 2000	VK3EK	R. G. Ashlin
'64 - '65	VK3ZER	R. W. Wilkinson	'82 - '83	VK6KZ	W. J. Howse	'00 - 2001	VK4TZL	G. R. McNeil
'65 - '66	VK3ZDM	J. R. Beames	'83 - '84	VK6KZ	W. J. Howse	'01 - 2002	VK4TZL	G. R. McNeil
'66 - '67	VK5HP	J. H. Lehmann	'84 - '85	VK3ZBJ	G. L. C. Jenkins	'02 - 2003	VK3EK	R. G. Ashlin
'67 - '68	VK3ZER	R. W. Wilkinson	'85 - '86	VK3ZBJ	G. L. C. Jenkins			



# Gridsquare League Table February 2003

Happy reading, Guy VK2KU

Congratulations to Mike VK2FLR on not only maintaining his top position in both 144MHz tables (terrestrial and EME), but also for achieving 100 gridsquares in both tables.

We also welcome some new callsigns to some of the tables. A number of stations have chosen to include a separate entry for the Digital (and SSB) modes, and it will be very interesting to

follow the development in Digital modes over the coming months. Certainly the Digital mode JT44 has been responsible for a rapid growth in EME scores.

There has been considerable movement in the microwave gridsquare totals. Could we please have some entries from VK5, where there is much activity on these bands.

Finally the informal competition to head the 432 and 1296MHz tables is very keen, and the leaders have the narrowest of margins.

As usual the tables are available in both Word 6/95 and HTML formats on the web page of the NSW VHF DX Group at [www.vhfdx.oz-hams.org](http://www.vhfdx.oz-hams.org) - click on the "Gridsquares" button.

## Gridsquare Standings at 25 February 2003

### 144 MHz Terrestrial

VK2FLR	Mike	102
VK2KU	Guy	90
VK3FMD	Charlie	79
VK2ZAB	Gordon	73 SSB
VK3BRZ	Chas	68 SSB
VK2KU	Guy	66 SSB
VK3EK	Rob	62 SSB
VK2DVZ	Ross	60 SSB
VK3KAI	Peter	59
VK3XLD	David	54 SSB
VK3TMP	Max	53
VK2EI	Neil	51
VK3ZLS	Les	51 SSB
VK3BDL	Mike	50
VK3CY	Des	50
VK3BJM	Barry	45
VK3WRE	Ralph	44 SSB
VK2DXE	Alan	43
VK3KAI	Peter	43 SSB
VK7MO	Rex	42
VK2TK	John	41
VK3CAT	Tony	39
VK3KEG	Trevor	39
VK4TZL	Glenn	35
VK2KU	Guy	29 Digi
VK2TK	John	29 SSB
VK4KZR	Rod	29
VK7MO	Rex	29 SSB
VK6HK	Don	28
VK4DFE	Chris	26 SSB
VK3HZ	David	25
VK3YB	Phil	23
VK3ZUX	Denis	23 SSB
VK2TG	Bob	22 SSB
VK3KME	Chris	22
VK7MO	Rex	21 Digi
VK3TLW	Mark	19
VK6KZ	Wally	19
VK3AL	Alan	18 SSB
VK3KAI	Peter	18 Digi
VK2LRR	Leigh	16 FM
VK6KZ/p	Wally	16
VK2TK	John	13 Digi
VK3DMW	Ken	13
VK2DXE/p	Alan	10
VK3ANP	David	10
VK2EI	Neil	9 Digi

### 144 MHz EME

VK2FLR	Mike	105
VK3CY	Des	66
VK2KU	Guy	52
VK3KEG	Trevor	4
VK3FMD	Charlie	3
VK2DVZ	Ross	2
VK7MO	Rex	2

### 432 MHz

VK2ZAB	Gordon	50 SSB
VK3BRZ	Chas	48 SSB
VK3XLD	David	46 SSB
VK3FMD	Charlie	41
VK3ZLS	Les	40 SSB
VK2KU	Guy	34
VK3EK	Rob	33 SSB
VK2DVZ	Ross	29 SSB
VK3BJM	Barry	29
VK3BDL	Mike	26
VK3KAI	Peter	26 SSB
VK3TMP	Max	25
VK3WRE	Ralph	25 SSB
VK3CY	Des	23
VK3KEG	Trevor	21
VK3HZ	David	16
VK7MO	Rex	15 SSB
VK3CAT	Tony	14
VK4KZR	Rod	14
VK2TK	John	13 SSB
VK3TLW	Mark	13
VK3ZUX	Denis	12 SSB
VK6KZ	Wally	12
VK4TZL	Glenn	11
VK3AL	Alan	10 SSB
VK3ANP	David	10
VK3YB	Phil	10
VK2TG	Bob	9 SSB
VK4DFE	Chris	9 SSB
VK3KME	Chris	8
VK6KZ/p	Wally	8
VK2FLR	Mike	6
VK2CZ	David	3
VK2TWO	Andrew	3
VK2DXE/p	Alan	2

VK2KU	Guy	2 Digi
VK7MO	Rex	2 Digi
VK3DMW	Ken	1
VK3KAI	Peter	1 Digi

### 1296 MHz

VK3XLD	David	32 SSB
VK3BRZ	Chas	31 SSB
VK3FMD	Charlie	27
VK3ZLS	Les	26 SSB
VK2ZAB	Gordon	25 SSB
VK3EK	Rob	20 SSB
VK2KU	Guy	19 SSB
VK3KWA	John	19
VK3WRE	Ralph	16 SSB
VK3KAI	Peter	14 SSB
VK2DVZ	Ross	13 SSB
VK3BDL	Mike	12
VK3BJM	Barry	12
VK3TMP	Max	11
VK7MO	Rex	10 SSB
VK4KZR	Rod	9
VK2TK	John	8 SSB
VK3TLW	Mark	8
VK3AL	Alan	7 SSB
VK6KZ/p	Wally	5
VK3BVP	Shane	4
VK3YB	Phil	4
VK6KZ	Wally	4
VK3KEG	Trevor	3
VK2DXE/p	Alan	2
VK3CY	Des	2
VK3HZ	David	2
VK2CZ	David	1
VK3DMW	Ken	1
VK4TZL	Glenn	1
VK7MO	Rex	1 Digi

### 2.4 GHz

VK3BRZ	Chas	11 SSB
VK3XLD	David	11 SSB
VK3WRE	Ralph	8 SSB
VK3FMD	Charlie	7
VK3KAI	Peter	7 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	4
VK3BJM	Barry	3
VK4KZR	Rod	2
VK3TLW	Mark	1

VK4TZL	Glenn	1
--------	-------	---

### 3.4 GHz

VK3FMD	Charlie	8
VK3WRE	Ralph	6 SSB
VK3KAI	Peter	5 SSB
VK3XLD	David	4 SSB
VK6KZ	Wally	4
VK3EK	Rob	3 SSB

### 5.7 GHz

VK3FMD	Charlie	10
VK3WRE	Ralph	9 SSB
VK3KAI	Peter	7 SSB
VK3XLD	David	5 SSB
VK6KZ	Wally	4
VK3BJM	Barry	2
VK6BHT	Neil	2

### 10 GHz

VK6BHT	Neil	9
VK3FMD	Charlie	8
VK3WRE	Ralph	8 SSB
VK3KAI	Peter	7 SSB
VK3XLD	David	7 SSB
VK3EK	Rob	5 SSB
VK6KZ	Wally	5
VK3TLW	Mark	3
VK2EI	Neil	2
VK3BJM	Barry	2

### 24 GHz

VK6BHT	Neil	3
VK2EI	Neil	2
VK6KZ	Wally	2

### 474 THz

VK7MO	Rex	1
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Additions, updates and requests for the guidelines to Guy VK2KU, [vk2ku@hermes.net.au](mailto:vk2ku@hermes.net.au), or by mail (QTHR 2002).

Next update of this table will be in May 2003.

Stations who do not confirm their status for more than 12 months may be dropped from the table.



# Spotlight on SWLing

by Robin L. Harwood

**The Middle East continues to be the primary trouble with the Americans being determined to press ahead with a war to settle the Iraqi issue despite the consequences. Clandestine broadcasting and communications operations were dramatically increasing every day. Do not be surprised if an American or international administration taking over in Iraq, will quickly establish a shortwave station.**

I have often referred to a clandestine broadcaster being observed between 2000 to 2100 on approximately 7070 and speculated that it was not coming from Iraq but from a nearby locality. The operation has been spasmodic although bubble jammers are always there.

However recent monitoring does indicate that it indeed may come from Iraq after all. The carrier is under modulated with a spurious signal 1 kHz lower. This is a characteristic of Baghdad's senders. I would not be surprised if these senders vanish in a similar fashion to those of the Taliban in Kabul in October 2001.

Many of the clandestine operations are emanating from the Kurdish regions of Iraq not controlled by Saddam Hussein. The Americans operate powerful senders in the south from Kuwait and the Gulf States, especially on MW.

A new station appeared on 1584 kHz at 1900 calling itself "R Tikrit" Originally the station appeared to favour the Iraqi Government but after a few days, the programming changed to be anti - Saddam.

The British successfully used this strategy in WW II. Stations would appear on a frequency and appear to sound genuine but would very cleverly slip in disinformation. This is part of the Psychological Warfare Unit. This unit has been operating senders from converted Hercules aircraft flying at high altitudes with multiple transmitters on MW, HF and FM.

They were reported to be using 9715 and the odd channel of 11292 and have been heard in Europe but rarely here. 9715 is always occupied by major broadcasters and would not be propagating well whilst I presume few receivers would be tuning in on 11292 on USB. Presumably this was for the Iraqi troops but lately programming has swung away from the troops to the general Iraqi populace.

Iran is also extremely nervous about the current situation. They also have

dramatically increased their Arabic broadcasts. I hear them well on 9935 kHz at 2030. I also note that English programming directed to Australia has now moved to 9870 from 9780 at 2130. The latter channel suffered heterodynes from a floating Yemeni station, nominally on 9780.

Another neighbour of Iraq is also easily heard on shortwave. Jordan is on 11810 in Arabic and is heard with call-in programs. Reports state the station has been heard in English earlier. Kuwait is heard on 9855 at 2100 yet is easily heard on 15495 and 15505 in parallel from 0200. An English release has been monitored further down the 19 metre band at 0500 yet is much weaker.

The Solomon Islands to our north east have been unsettled for some time yet it rarely makes worldwide news.

There have been political assassinations and other violent activities, making it a very dangerous place indeed. The station in Honiara is easily heard here on 5020 from 0700. It broadcasts in local languages and English and after the daily programming ceases, the sender remains on-air, relaying either Radio Australia or the BBC World Service. The station has remained operational despite no staff salaries paid or capital works undertaken.

The crisis in East Asia continues after the Korean Democratic Republic (DPRK) abandoned the Nuclear Non-Proliferation Treaty and expelled IAEA inspectors.

They also did not renew the visa of the only authorised ham radio operator, who has now departed the DPRK, with his gear. Tensions are very high as I am writing this column, with American bombers now being stationed in Guam. South Korea now has a new president and is pressing for a diplomatic solution.

Other nations within the region are also pressing for the same result, urging the DPRK and the Americans to engage in direct negotiations. You can follow developments from the region from

China Radio International in English from 0900 to 1055 on 11730 or 15210 kHz or on 9780, 11760 or 15415 at 1200. Prior to 1200, the VOA comes in well in English but is lost under the dominant CRI signal.

The British evangelical Christian broadcaster, FEBA, has ceased broadcasting from their Seychelles base. It will now be using commercial senders from the Merlin organisation in the UAE or from the former Soviet Union. The three 100 kW senders are being sold to an American religious broadcaster - High Adventure Ministries and will be relocated to Liberia, Kentucky and a third as yet undisclosed location.

Well that is all for the time being. All the best with your monitoring-  
73 de VK7RH

ar

## "Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the



### Radio Amateurs Old Timers Club Australia

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

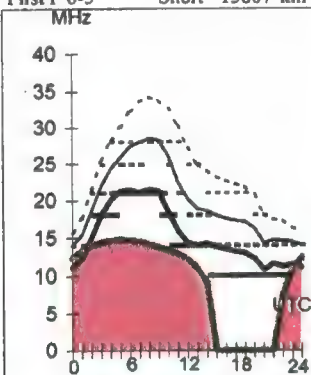
RAOTC,  
3/237 Bluff Road  
Sandringham VIC 3191

or call Arthur VK3VQ on 03 9598 4262 or Allan VK3AMD on 03 9570 4610, for an application form.

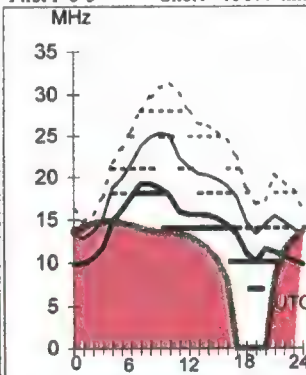


**Adelaide-Moscow 318**

First F 0-5 Short 13807 km

**Brisbane-Berlin 321**

First F 0-5 Short 15677 km

**April 2003**

T index: 75

**Legend**

Frequency scale

- UD
- E-MUF
- OWF
- F-MUF
- ALE
- >10%
- >50%
- >90%

Time scale

**HF Predictions**

by Evan Jarman VK3ANI

34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.

These frequencies as identified in the legend are:-

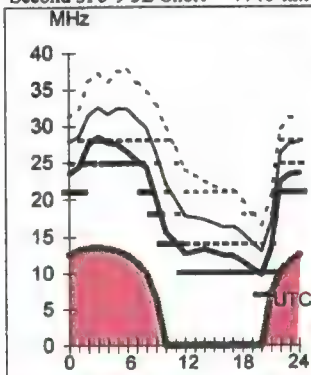
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

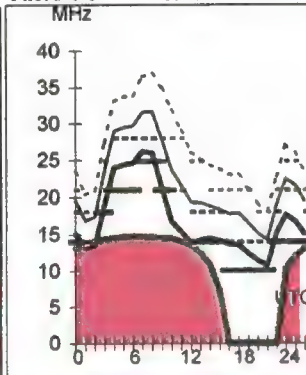
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

**Adelaide-Osaka 357**

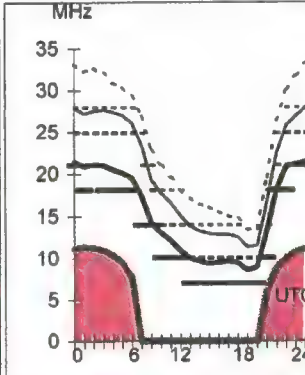
Second 3F5-9 3E Short 7746 km

**Brisbane-Cairo 288**

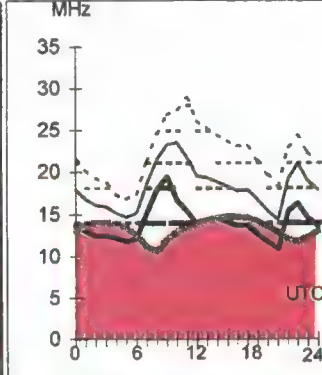
First F 0-5 Short 14390 km

**Canberra-Auckland 102**

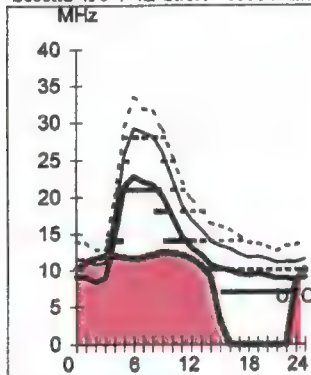
First 1F7-8 1E0 Short 2300 km

**Darwin-London 145**

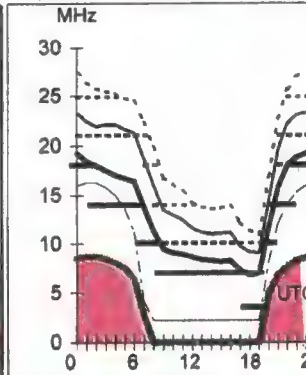
First F 0-5 Long 26171 km

**Adelaide-Pretoria 238**

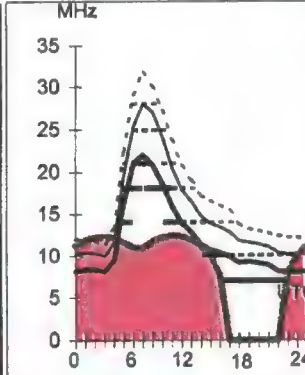
Second 4F5-7 4E Short 10064 km

**Brisbane-Noumea 70**

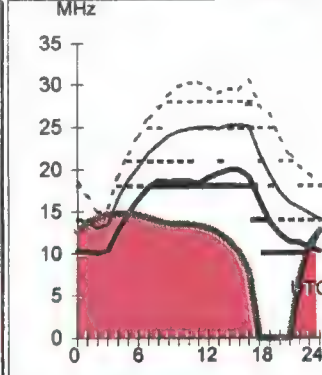
First 1F15-18 1E Short 1473 km

**Canberra-Capetown 219**

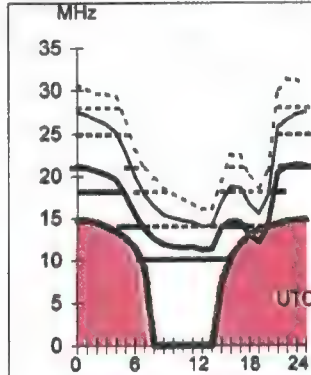
Second 4F4-6 4E Short 10779 km

**Darwin-London 325**

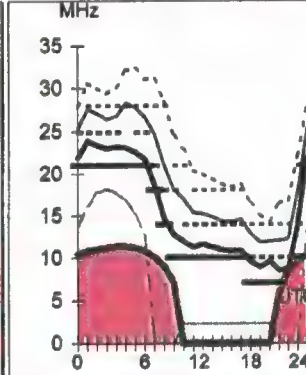
First F 0-5 Short 13853 km

**Adelaide-Seattle 51**

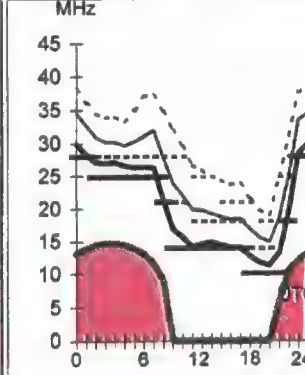
First F 0-5 Short 13413 km

**Brisbane-Singapore 293**

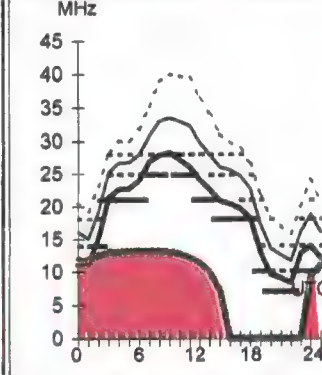
Second 3F9-13 3I Short 6146 km

**Canberra-Manila 327**

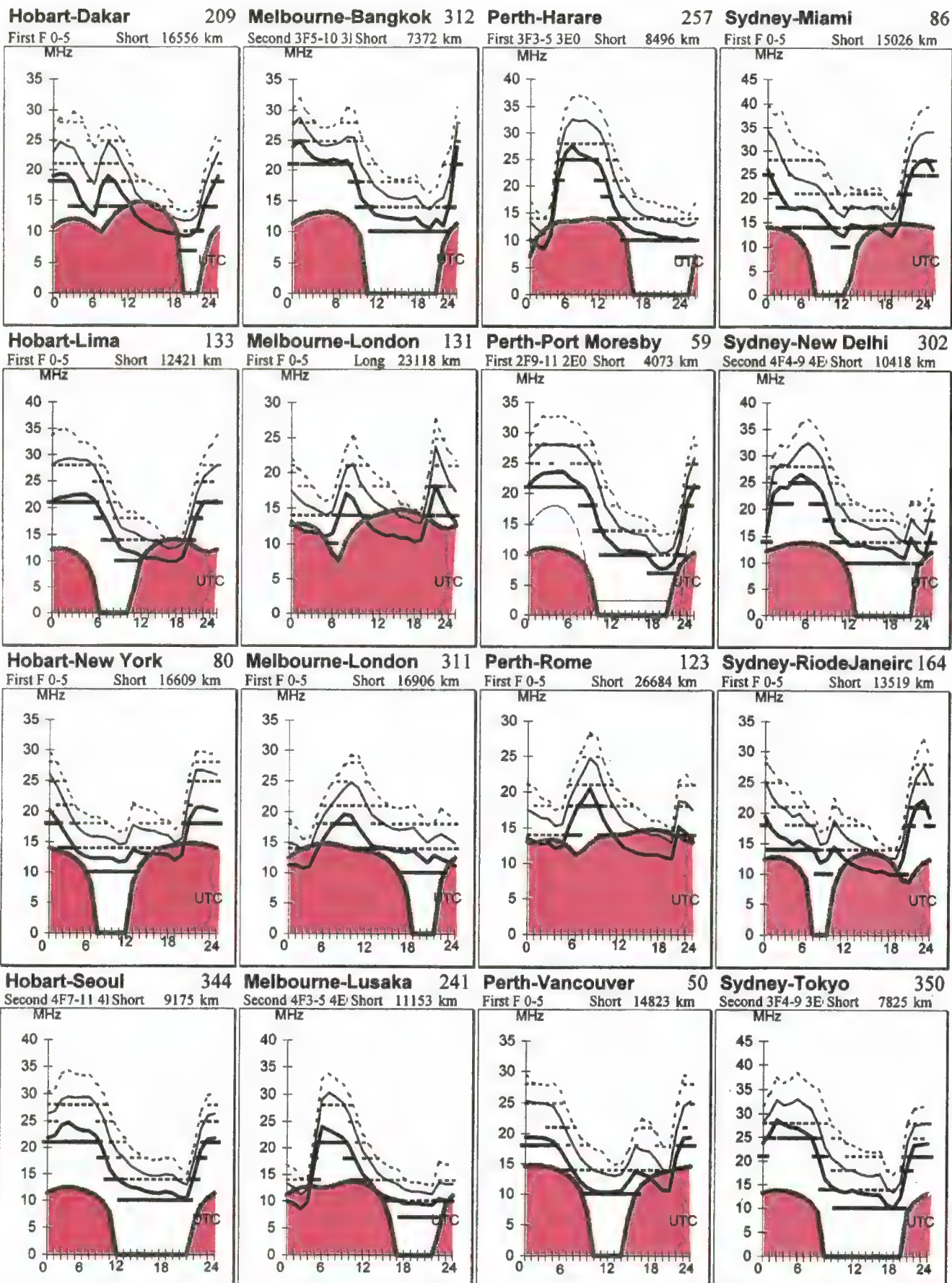
First 2F1-6 2E0 Short 6286 km

**Darwin-Riyadh 295**

Second 4F5-12 4I Short 10000 km









# Portable Operation with AO-40

For over 20 years, around Christmas and New Year some friends and I took part in a mountain-topping expedition to various peaks in the Victorian Alpine National Park. The activity was mainly centred around portable satellite operation. We had a ball.

Perhaps that's why a message from Scott Townley, NX7U posted on the AMSAT bulleting board recently caught my eye. He described in some detail his portable setup for working with AO-40. I contacted Scott and he agreed that I could "pick the eyes out of it" and print some highlights in this column. Scott began,

"I've wanted to put together a "permanent" portable station for AO-40 for some time, and today looked like as good a day as any for the shakedown cruise". He then went on to describe the gear which consisted of a Yaesu FT-100 (about 20 W on 70 cm) on the uplink into a 9 el vertically polarized yagi. His downlink equipment comprised a Kenwood TM-255A, a 60 cm x 90 cm "BBQ-grill" dish and a fully modified AIDC3733 down converter. Scott mounted the antenna system on a 3 metre tripod and used the world famous "Armstrong" azimuth control. He was able to achieve a small amount of elevation control from the ground. Scott described [and I well remember similar incidents from our expeditions] hay-wiring things together due to lack of a specific RF or DC connector. He continues, "The location was better than home. A clear, flat shot to the east for several hundred feet. At home I have many 20' trees and a 6' cinderblock wall to deal with.

**1 Biggest surprise:** hearing AOS about 4 minutes before NOVA called it. And I'm further west than my home QTH (where I calculated AOS). I never hear AO-40 at home at AOS; usually takes 2 degrees of elevation or so. Diffraction?

**2 Biggest problem:** the FT-100 doesn't like to transmit on 70 cm. Never realised this before as it has hardly ever been used to TX on 70 cm. Seems to be some kind of thermal-related issue. Argghh

## Other Notable Things:

- 3 The elevation nulls of the antenna (ground effect), which I can hear easily on my 2' CP dish at home, were extremely/much more evident on the horizontally polarized BBQ.
- 4 The TM-255 detects SSB very well; for my ear much better than the FT-726R at home. No audio DSP was in use at either location.
- 5 I need a bit more uplink power, but I already knew that.
6. Need to implement better ground-level elevation control.

Satellite activity before the RUDAK window was quite heavy. The BBQ seemed to hear well. Heard my first ZS stations, and worked a new country (HA). Also matched my best DX with Vitaly, UU9JJ. So I guess you could say that there was not too much performance penalty for the portable setup!"

## Scott Townley NX7U

On reading Scott's account it occurred to me that AO-40 is a much more operator-friendly satellite than any of the earlier phase-3 birds for portable work.

In a way this has been forced upon us by some equipment problems on AO-40. More people than ever before have been urged to move up into the microwave region. It's turned out to be much less painful than many imagined. The main advantage being much smaller and therefore lighter antenna arrays.

Mode-B or Mode-J operation on previous high orbit birds required large, heavy 2 m arrays which taxed the portable rotating system somewhat. As well, they imposed heavy requirements on the mounting structures, all of which had to be carted up the mountain.

How much easier a tiny, light aluminium dish and a 435 MHz or even better still a 1269 MHz yagi that you can hold in one hand. A simple home made collapsible tripod would be more than adequate to hold such an antenna array.

Scott's observation of "below-the-horizon" access is also worthy of note. This was a feature that we also found during our mountain-top expeditions. It was common to hear the satellite seconds or even minutes earlier than predicted. It can be explained, as Scott postulated, by forward refraction of the satellite signal over the horizon, helped of course by the ideal, super quiet location!

My own AO-40 gear has never been permanently installed at the masthead. I get it out and have a go from time to time. Now, after reading Scott's motivating message, I find myself thinking seriously of making it specifically portable and setting it all up on mountain tops just like in the early AO-10 and AO-13 days.

## The AMSAT group in Australia.

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

## AMSAT-Australia HF net.

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC with early check-ins at 0945 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC with early check-ins at 0845 UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,  
9 Homer Rd,  
Clarence Park, SA. 5034  
Graham's email address is:  
vk5agr@amsat.org



## "Satgen" Writer John Branegan G4IHJ Silent Key

Most readers will already be aware that we lost a satellite stalwart on February 9<sup>th</sup> when John Branegan G4IHJ died. The news came just a day too late to include in last month's column.

John's "Satgen" bulletins had a great impact on anyone who had a connection with the satellite field either amateur or professional. They were a regular talking point in my own round table contacts and luncheons with amateur radio satellite friends.

The bulletins were widely distributed via amateur radio satellites, amateur packet radio and the internet. I first came across them via packet radio. They spanned some 12 years from 1989 to 2001 and totalled 682 Satgens in all. A monumental effort on John's part. No

matter what your area of interest in satellites, you could always find something to engage your mind in the subject matter that John discussed. On a few occasions I wrote to John to further clarify a point or to add my own experiences. He must have received a huge amount of similar mail but he always replied promptly and at length. Like many others I tried to download every Satgen but due to the vagaries of packet radio, a couple of computer crashes and other life matters

intervening, there were many gaps in my collection. If you want to 'top-up' or complete your collection [or just see what all the fuss is about], you can download a complete set from:

<http://www.amsat.org/amsat/articles/satgen/chron.html>

The information in the Satgens is timeless. It will go on educating newcomers and enriching old timers for as long as radio amateurs are interested in satellite communications. John has left us a lasting legacy. Thanks OM.

## PCsat Mailbox Activated

Bob Bruninga announced recently that the mailbox on PCsat had been activated. This prompted a flurry of activity and reports rolled into the AMSAT bulletin board regarding its operation. At the time of writing it still appears to be operating, subject of course to PCsat's periodic eclipses depriving it of sunlight. The mailbox acts in every way pretty much like a normal packet radio mailbox. If you connect you should see something like the following.

```
*** CONNECTED to MAIL-1
[KPC9612P-8.4-HM$]
67330 BYTES AVAILABLE
THERE ARE 16 MESSAGES NUMBERED 1-17
Test of PBBS
ENTER COMMAND: B,J,K,L,R,S, or Help
(The help file looks like this).
B(ye) PBBS WILL DISCONNECT
J(heard) CALLSIGNS WITH DAYSTAMP
J S(hort) HEARD CALLSIGNS ONLY
J L(ong) CALLSIGNS WITH DAYSTAMP
AND VIAS
L [x [y]] [:] LIST MESSAGES x THRU y YOU
CAN READ
L <|> call LIST MESSAGES FROM OR TO
CALL
LB LIST BULLETINS
```

```
LC [cat] LIST CATEGORIES
LL n LIST LAST n MESSAGES
LM(ine) LIST UNREAD MESSAGES
ADDRESSED TO YOU
LO [+|-] LISTING ORDER
LT LIST TRAFFIC
LTn DISPLAY LOCATION TEXT n=1-4
K(ill) n DELETE MESSAGE NUMBER n
KM(ine) DELETE ALL READ MESSAGES
ADDRESSED TO YOU
R(ead) n DISPLAY MESSAGE NUMBER n
RH n DISPLAY MESSAGE n WITH HEAD-
ERS
RM(ine) READ ALL MESSAGES AD-
DRESSED TO YOU
S(end) call SEND MESSAGE TO callsign
S[B|P|T] call SEND BULLETIN, PRIVATE, or
TRAFFIC
```

## Activation of SAUDISAT-1C SO-50 over Australia

From Graham Ratcliff VK5AGR, After a request to the group responsible for SO-50 to activate the satellite when in view of Australia, a network of ground stations has been setup to do just that.

This manual activation will continue until software gets uploaded to SO-50 to carry out the process automatically.

Therefore, in the short term SO-50 will be active whenever there is a ground station available to activate it which should be the case for most of the passes in the evenings and some of the passes in the morning local times depending on ground station availability.

The satellite operates similar to UO-14's FM Mode J transponder. It has a 2m

uplink on 145.850 MHz which has to have a 67 Hz subaudible tone to key up the downlink on 436.800 MHz. Once the transponder has been activated by the ground station network the transponder stays activated for 10 minutes after which time a ground station would have to reactivate the satellite.

So do not be all that surprised if the transponder suddenly switches off 10 minutes or so into a pass. Stay tuned - it may take a moment for a ground station to re-activate the bird.

### Details of SO-50 SAUDISAT-1C

*Uplink:* 145.850 MHz (67.0 Hz PL tone)

*Downlink:* 436.800 MHz

*Launched:* December 20, 2002 aboard a converted Soviet ballistic missile from the Baikonur Cosmodrome.

*Status:* Operational. SO-50 carries several experiments, including a mode J FM amateur repeater experiment operating on 145.850 MHz uplink and 436.800 MHz downlink. The repeater is available to amateurs worldwide as power permits, using a 67.0 hertz tone on the uplink.

## When is July not July?

The importance of date formats is something that can't be overstressed. It is of particular importance during the early days of each month.

This is a problem that's been with us for decades but the advent of packet radio, satellite "store and forward" techniques and lately internet email has made it commonplace for radio amateurs to

correspond with people of like mind on bulletin boards and by various other computer based means.

Given the almost instant nature of internet mail, messages can be

exchanged in minutes and amateur radio satellite message forwarding is pretty slick too. I can recall exchanging 4 message "overs" using "store-and-

*continues on 53*



# Over to you

## Bloody Fine Gentlemen

In March AR, Peter Cossins, (VK3 BFG) writes that we should all use the NATO phonetics. I don't agree!

We are an amateur group and some of us prefer our own, and there is a good argument in favour of this.

Of course the main purpose of phonetic spelling or should I say the 'soul' purpose of it is to minimise error, and a number of official phonetic alphabets have existed over the years, and even now NATO is not in universal use.

The Australia wide telephone network seems to prefer S for Sam and F for Freddy not Sierra and Foxtrot. Some of us are old enough to remember the old army Ac Beer Cor alphabet, and the hotel in the Melbourne suburb of Toorak is still widely and affectionately known as the "Toc Aich". (*alas no longer; its now probably apartments or a dress shop-ed*).

Understandably the military has always needed a standard phonetic alphabet, and it is nice for us to be able to make use of it; but we are not tied down to it; nor should we be.

We as an amateur group can communicate sometimes more effectively than some professional groups, mainly because of our ingenuity. In giving call signs, if there is a known phrase of expression that can be used instead of official phonetics, it can be more effective..... and yes fun! And there are some funny ones around.

The Maritime Mobile net has always been known as the Mickey Mouse net, and there are many well known hams world wide using their personal phonetics like W3 push button, and my friend Alex VK3 Just Got Home. Of course the phrase must be familiar to the person being called, for example the call sign VK3 Fletcher Jones would not be understood outside our shores.

For the fun of it, let us compile a list of funny phonetics of FUNETICS if the editor agrees.

Peter, why don't you use "VK3 Bloody Fine Gentleman" ?

**Bob Slutzkin VK3Sweet Kisses (not quite 3 Silent Key yet)**

**The views expressed in these pages are not necessarily those of the WIA**

## Bushfires

The article in March edition of Amateur Radio on the involvement of radio amateurs in the Victorian bushfires, and its accompanying photographs, was excellent.

It was essential to accurately document this historic event, and the WIA journal was the ideal place in which to publish a report of this importance. Copies of that AR magazine are now being sent to the "decision-makers" in various government agencies and other organisations to help make them better aware of the role of amateur radio in providing emergency communications. It can but do the cause of amateur radio enormous good for many years to come.

Congratulations to Jim Linton VK3PC who wrote the article against an almost impossible deadline, to you as the Editor for giving it as many pages as it clearly deserved, and the production team for their professional design work on the cover and layout of the article.

**John Patterson VK3ATQ.**

## Foundation Licence

I read with interest the report by David Pilley on the UK Foundation Licence and the progress that has been made in expanding the hobby of amateur radio in the UK (AR February). I strongly believe that a similar scheme should be adopted here in Australia. I personally could sign up at least three members of my family and friends who would be interested in using amateur radio but feel the barriers presented now are either too great or simply irrelevant to their intended involvement.

Neville Chivers VK2YO in the same edition seems to be against this "watering down" of the ranks, but this only begs the question "Who do we want in our ranks"? Those against lowering the barriers seem to have an idea that we are a technical elite that should not be messed with. In today's world most of us are far from the technical elite. I entered the ranks of amateur radio over twenty years ago and although I maintain a sound knowledge of the technical aspects of the hobby and enjoy constructing equipment I would hesitate to even point the soldering iron at a modern solid state transceiver. The

## Thank you to anonymous donor

I have been building up a collection of old radios, and some weeks ago I added an FT200 to the collection. This radio looks virtually brand new, with only one faulty component that I have been able to replace. One problem though - no PA valves. I was able to fit a well-used pair of valves but needed a replacement pair.

I mentioned this to only a couple of people, but the word must have spread somehow. A week or so later I received a box in the mail with a spare pair of PA valves in it. No note, no return address, just a postmark in Pakenham (postcode 3810).

Since I don't know who this anonymous donor was, I hope that he might be a reader of "AR". If so, I'd like to thank him very much for his generosity.

Cheers,

**John Martin VK3KWA**

hobby is not what it was when it was first formed and it has definitely gone beyond what some might see as the golden days when we all built our own gear and talked nothing but technical stuff over the air.

As a family we regularly take part in camping, off road activities and WICEN support to State and Rally Australia events. Often amateur radio becomes the communication medium of last resort when everything else goes down, but is hobbled by a lack of operators. How much better would the hobby be if more people could participate at a level that suits their interest? Not everyone is a keen technician that must know how it all works, what they must know is how to operate correctly, be safe around electrical equipment and not cause interference. This is what the Foundation Licence appears to address. If the spark of interest is kindled then higher licence grades will follow. If not then they will continue to be involved in the hobby at an operator level that will generate use of our bands and enlarge the amateur radio community.

**Nigel Dudley VK6KHD**



### The elusive page 16

Recent reader's letters have prompted me to put in my two pennyworth.

I have been licensed for nearly 40 years (G3SCD since 1963) and came to live in VK3 in 1999. I have seen the rise and fall (sometimes the reverse) of many clubs and organisations and have been a member of the RSGB for all of this time.

Naturally, in support of Amateur radio and all the principles it stands for I joined the WIA. Soon it was apparent that the near universal whinging of the decline of the hobby was rotting the system and the contents of the magazine 'Amateur Radio' and many reader's letters support this trend.

Amateur radio is not dead, neither is CW but times change, younger folk have different ideas and priorities and accept what in past times would have been thought of as daily miracles, as part of normal life: Satellite TV, the internet, mobile phones and all the forms of digital communications we take for granted now.

To ensure continuance of the hobby, the first step now would seem to be to recruit new blood. The many changes to the amateur licence structure in many countries cause controversy and I am not necessarily an advocate of these changes. But one can not fail to be

impressed with the quoted figures from the RSGB who recorded 5500 new licences in UK in 12 months - apparently due to the latest form of restricted all band licence, the M3 call prefix.

The success or otherwise of the AR magazine being on the bookstalls has not yet been fully accessed but in my humble opinion it would not attract many serious subscribers:

In Australia, the only competitor I know of is a well produced, quality printed Radio magazine which admittedly may be struggling for survival - but it contains a variety of articles and adverts to appeal to a wider section of electronic/radio hobbyists. Yes, adverts do greatly enhance a magazine. And the cover price is the same.

Looking at AR, critically, but not facetiously, for example in the October issue 2002 the inside front cover page (a valuable advertisement spot I am sure) there is a full colour description of the new call book on CD. No price, but see Nov issue for details. In that issue - (I can't wait!) It again extols the virtues at (too much) length the bottom lines suggests you order one from "your division" - details on page 16.

Turning to page 16 I find yet another

half page advert with division addresses. BUT not a price in sight!

In December issue the same inside cover advert proclaims the same information and suggests a QSY to page 16 again - where Andrews's Communications have a more interesting advert, no mention of the CD of course. The same was repeated in February issue. Again not a price in sight.

Are you trying to make it difficult?

I may have missed something but I could not find any further reference to the CD in that or any other issue. I can manage without it.

The survival of virtually any magazine is dependent on its advertisers: Surely those two full colour pages mentioned would have been better sold to a trader.

I note also the variations of the member subscriptions for the different states: Why? And considering the WIA is desperate to gain strength, the sub "without the magazine" would seem to be excessively high. A nominal \$10 or similar would surely be an encouragement for non-active/relatives of amateurs to show their support. It is time for the WIA to unite into a Federal organization not a state related one and move into the 21st century!

David Dunn, VK3DBD/G3SCD

### AMSAT continues

forward" with Ron VK3AHJ in Melbourne via KO-23 as a test, all during one pass.

Now here comes the fly in the ointment. Here in Australia we are probably more aware than most of the fact that there are two common flavours of date format in use around the world. Month-Day-Year is exclusively used in the USA whilst Day-Month-Year appears to be in favour with much of the rest of the world.

Most software writers are aware of this and where applicable give the user the choice of which date format is preferred somewhere in the set up procedure. Now, dates and times are usually vitally important in any discussion related to satellite work. It seems that Americans in particular are either unaware of this duplicity or they refuse to acknowledge

it. Time and time again one sees dates written as [eg.] 2/7/03 or 5-6-03. This leaves the reader in a complete quandary as to whether 2/7/03 represents 2<sup>nd</sup> July or 7<sup>th</sup> February. The possible ambiguity continues until the 13<sup>th</sup> of each month and can be a real nuisance and a source of much hair-pulling.

You find yourself scanning the rest of the message for clues as to which of these dates is actually meant - often with no definite result. I must admit that my own reaction is usually to discard the message and forget about it. The tragedy is that the confusion is easy to overcome by using [say] 2<sup>nd</sup> July 2003 or better still the generally agreed standard of 2003 Jul 02 or 2003-07-02. I prefer the alpha-numeric version as it is utterly unambiguous. This format also lends itself to the inclusion of a further time

stamp, again in the same diminishing order; 2003-07-02 17:45:30.

That way we have Year-Month-Day Hour:Min:Sec and there can be no confusion in anyone's mind as to what exact date and time that represents. It seems we have been plugging away on this one since back in the 1950s HF DX days and not making much headway.

It's a worry and it often generates multiple unnecessary clarification mail along the way. The best we can do is be aware of it and act accordingly in all our own mail postings. The matter was brought to my attention by a message on the AMSAT-BB from Matt VK2DAG appealing for clarification in just such a case of unclear date format. Thanks Matt.

ar



# Hamads

## FOR SALE ACT

• **Yaesu FT-1000** with MD-1 mic and BPF-1 filter \$1400. **SP-5** speaker \$100. **FT-411** 2 m h/ h \$120. **TH3 jnr** new in box \$500. **7.7 m lattice mast** (Nally) \$200. **Hi-Mound HK708 CW key** \$25. All items ono and purchaser to collect. John VK1CJ Phone 02 6251 1816.

## WANTED ACT

• **Valve socket for AMPEREX 5868 valve.** Socket is Super Giant 5 pin. Rob VK1DE QTHR. Phone 02 6241 5191.

## FOR SALE NSW

• **Yaesu FT-920** HF and 6m transceiver 100 W, auto ant tuner and many features, very good order, handbook, mic, cables, carton, \$1700. David VK2BDT Phone 02 4827 5036.

• **Tectronix oscilloscope type 535A** with plug-in module B dual channel type CA with manuals \$100. Scope mobile type 500/53A \$50. Rod VK2CN QTHR. Phone 02 4944 8393

• **AWA BS-15A FM txcvr**, 240 V base station on 77 MHz, 2 speaker phones, S/N 8R62094 \$95. Tony VK2BBJ. Phone 02 4360 2234.

• **Tunable Audio DSP Filter MFJ-784B.** Independent Hi and Lo pass brick wall filters, or Centre and BW for CW, 4 Data modes, SSTV/ Fax. Auto/manual notches, DSP Noise Reduction. As new and in perfect order (value \$500), sell \$275. Guy VK2KU, QTHR. Phone 02 4759 2670 or vk2ku@hermes.net.au

• **60ft aluminium lattice tower kit** [ATN] partly constructed. Could be transported in New England area for small addition. \$500. Roger VK2FGE QTHR. Phone 02-67-727840, or rchubb@ceinternet.com.au.

• **Kenwood TS-930S** HF tcvr \$800. **Kenwood SP-930** matching Speaker unit \$75. **Kenwood TM-2550A** 2 m tcvr \$250. **Yaesu FT-101** tcvr \$200. **Yaesu FT-707** HF WARC tcvr

\$350. **Yaesu FP-707** PSU \$125. **Yaesu FC-707** ATU \$100. **Heathkit SB-200** linear \$425. All units good condition. VK2DM QTHR. Phone 02 4946 7674 or alpammac@bigpond.com

• **KTI XI-6** 1.6m C Band Satellite Dish (disassembled). Dual Polarity LNFB. Dish Actuator **Drake ESR4240E Receiver**. **APS4240E** Antenna Positioner. Handbooks for all equipment, \$500 the lot. John Toland. VK2XXK, 101 College St. Lismore 2480. Phone 02 6621 2933 or jtoland@nor.com.au.

• **3 m Satellite Dish, Chaparral MC-115 Rx**, 3' Actuator, **C-Band Feed & LNB**, \$300. 1' & 2' Actuators, \$70ea. **1.2 m Channelmaster dish**, \$100. Various Feeds and LNBs, \$Ask. **NTSC-PAL Converter**, \$50. Various decoders, \$Ask. Several analogue Sat. Rxs, \$Ask. "Sat Finder", \$50. 2 x WeatherFAX I/Fs, \$50ea. **"SATFAX" Software**, \$50. **FM-828 A**, \$80. **HP-7550 Plotter**, \$150. **NEC 3D Monitor**, \$60. **2 x Video Blasters**, 25 ea. **Grandtec VGA-Video Converter**, \$50. **30 Pin RAM sticks**, \$Ask. roger.woodward@bigpond.com, Phone 02 9547 2546.

## WANTED NSW

• **Copies of ARRL and RSGB Amateur operators' handbooks** circa 1968 to 1970 also **Single sideband for the Radio Amateur (ARRL)** of about the same era. Will pay reasonable prices for a copy of each in good condition. Pat Brennan VK2ABE. PMBrennan@bigpond.com.au, PO Box 158, Tamworth NSW 2340

• **Valve tester Palec ET4** in mint condition, no faults, including all books, manuals. May consider other type(s), not for restoration, just use. Stanley Dogger, 116 Tunnel Rd, Stokers Siding 2484. Phone 02 6677 9292 AH.

## FOR SALE VIC

• **Yaesu FT-301-II** 7C090192, **FV-301** EXT VFO, **FC-301** ATU, **YO-301** monitor scope. **YP-150** dummy load Fan-cooled, **10 m-15 m 4 el Yagi** complete. Make offer. VK3CRZ Phone 03 9379 3423

• **Nally tower 26/42 ft** \$500, to be removed by buyer. **Emtronics HB-35C** antenna \$200. **Daiwa rotator** \$200. **2 m Ringo antenna** \$15. **Galv antenna post 3.2m** (2m X 50mm)/1.2m X 37mm) \$20. Laurie VK3DPD QTHR. Phone 03 9818 6009.

• **Kenwood TS-120S** HF tcvr, works very well, \$200. **Yaesu FP-707** 20 amp P/S GC \$125. **Yaesu 2m hand helds FT-23** \$125, **FT-411** \$150, both GC. **Yaesu FT-1012D** HF tcvr EC \$325. **Yaesu YD-148** desk mic EC \$50. **D/Smith 30 watt 2m amp**, as new \$30. Ron VK3OM QTHR. Phone 03 5944 3019.

• **LC meter, model LC-6043**, as new \$58. **6146B** tubes \$47.50 each. John VK3AJL QTHR. Phone 03 9481 6771.

• **ICOM 736** (yes 736!!). 100 W HF transceiver in full working condition \$1200. Also, **Hustler Multiband Vertical** \$300. Deceased Estate. Chris VK3CGB Phone 03 5728 6585 or email thebretts@hotmail.com

• **ICOM IC-281H** Mobile 2m transceiver s/n 001702 with manual (& home brew Slim Jim antenna). \$320. **Diamond F-23A** antenna - 2m 5/8 wave 3-element vertical. \$95. Plus misc. info. Any offer considered. David VK3DNG QTHR 03 9859 4698. Email: darodda@jeack.com.au

## WANTED VIC

• **Advance Millivoltmeter Model 77B.** A circuit and/or manual is wanted for this VTVM. BWD CRO Model 502. A circuit wanted. Brian VK3WYN QTHR. Phone 03 5664 1251

## FOR SALE QLD

• **Antenna, ATN 13-30 Log Periodic**, suited for 13-30 MHz, with Antenna Rotator medium duty, preselect controller, with 30 m of cable and tower top thrust bearing. Please contact Karl, Phone 07 3823 4919 or email: vk4cws@iprimus.com.au.

## FOR SALE SA

• **HF-Linear-Amplifier CE-5000E**, made by Amplifier Systems, Northridge, CA, S/N 10-98697, single tube 3 CX 3000 A7, 5kW cont. out, 13dB @ 3-30MHz, 3 phase power, 44" X 25" X 24", nearly new in original transport crate, heavy and therefore to be collected by buyer from its Gold Coast storage. If you are serious, have a ute, and have spoken to ACA, please ring: Harro VK5HK Phone 08 8323 9622 or fax 08 8323 9659.

• **Yaesu FT-290R** 2 metre all mode transceiver with power supply, mic, manual, S/N. 3.281747. \$200. Peter Russell 50753. Phone 08 8255 1618.

• **Kenwood TS-50s.** All mode, all band, HF Transceiver. Exc condition, inside and out. Most of its life in the shack, but great for portable work. Supplied with: mobile bracket, standard hand mic, original manual, original packing, schematic sheets, DC lead, and extra technical information. s/n 50701378. \$850 ono. John VK5EMl Phone 08 8278 1269. Email: dellio2@bigpond.net.au.

# About hamads....

- Hamads may be submitted by **email** or on the **form on the reverse of your current Amateur Radio address flysheet**. Please print carefully, especially where case or numerals are critical.
- Please submit separate forms for For Sale and Wanted items, and be sure to include your name, address and telephone number (including STD code) if you do not use the flysheet.
- Eight lines (forty words) per issue free to all WIA members, ninth and tenth lines for name and address. Commercial rates apply for non-members.
- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.

- QTHR means the address is correct in the current WIA Call Book.
- Ordinary Hamads from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.
- Commercial advertising (Trade Hamads) are pre-payable at \$25.00 for four lines (twenty words), plus \$2.25 per line (or part thereof), with a minimum charge of \$25.00. Cheques are to be made out to: WIA Hamads.
- Copy should be typed or printed clearly, and be received by the deadlines shown on page 1 of each issue of Amateur Radio, at:

Email: [newsletters@ozemail.com.au](mailto:newsletters@ozemail.com.au)

Fax: 03 9756 7031

Postal: Newsletters Unlimited, PO Box 431, Monbulk Vic 3793



• **ICOM IC-40s** for sale (Adelaide). Brand new, still in box (replaced stolen item) now unwanted. NEW price \$480.00, will sell for \$400.00. Contact Paul on Mobile 0407 177 369 or email paulgo@ihug.com.au.

#### WANTED SA

• **Valves 6146 and 12BY7**, new or known good used. **Eproms 2732**. Eddie VK5ZE, QTHR. Phone 08 8255 7586.

• **Yaesu FR-101** receiver. Good price offered. Peter Russell 50753. Phone 08 8255 1618

#### FOR SALE WA

• **Yaesu FT-757GX11, FC-757AT, FP-700** power supply \$1000 complete. **TE-33** still in box \$600. VK6PDE. Phone 08 9526 2710.

#### FOR SALE TAS

• **Icom communications receiver R-71A** 0.1 MHz-30 MHz SSB CW FM AM, 120 V 240 V with manual Serial No 03450 \$500. QTHR VK7ZAL.

#### WANTED TAS

• **ONE NEAR DEAD FNB-26 battery pack** in a good uncracked case. Send details to Mike VK7KMH QTHR or Phone 03 6425 6380

#### MISCELLANEOUS

• The WIA QSL Collection (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 9728 5350

#### TRADE ADS

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<http://www.hamsearch.com>

a not-for-profit site that is a  
search engine for hams

## VHF/UHF an expanding world

### 432 DUBUS March 15/16 2003 Contest

Conditions seemed quite stable and only minimal Libration fading during my Moon rise on both days. Polarisation was about 45 degrees into Europe for the most part on 15th but very pronounced 90 degrees shift on the 16th. There were short periods of deep fading but these seemed rare. Overall, although there was solar activity and Aurora evident on HF, 70 cms was for me, about "normal to good."

Activity was very good into Europe and I was kept very busy as evident by the log. Unfortunately the same could not be said for the USA where there was only one station on for both days of my Moon rise. Operating practices were just excellent and a very enjoyable activity weekend. I managed to work 3 new Stations during the period and renew acquaintances with several "oldies".

Although activity was very much down into the USA (and that is not an over statement!) I managed more QSO's and multipliers than last year. Final claimed score. 44 QSOs x 22 multipliers = 96800 pts (operating time about 5 hours total)

#### 15th March 2003

1255 UA3PTW 55N 56N : 1259 KL6M 55N 55N : 1305 SM3AKW 55N 56N : 1309 RA3LE 55N 56N : 1341 UT3LL 33N O 1347 DL7APV 55N 55N : 1359 OZ4MM 55N 44N : 1407 F2TU 55N 55N : 1416 SP6JLW 55N 55N : 1421 VK4AFL 55N 55N 1427 DL4KG 54N 55N : 1432 DJ6MB 55N 55N : 1446 HB9Q 55N 55N : 1450 DL9KR 57N 57N : 1456 SM2BYA 53N 55N

1500 OK2BDQ 55N 55N : 1507 PA3CSG 55N 55N : 1513 DJ3FI 55N 44N : 1523 S52CW 55N 55N : 1529 F6KHM

55N 55N 1536 OZ6OL 55N 56N : 1542 OE3JPC 55N 55N : 1552 OE5JFL 55N 56N : 1556 DF3RU 55N 57N :

1600 G4RGK 54N 55N 1607 I5CTE 54N 55N : 1611 1N3AGI 54N 55N : 1617 EA3DXU 55N 55N : 1622 G4ALH 53N 54N : 1637 PA2CHR 54N 55N : 1645 DL8OBU 53N 53N : 1652 DK3WG 55N 56N

#### 16th March 2003

0812 JH6AHB 53N 55N : 0817 JR9NNC 53N 44N : 1529 SK0CC 53N 53N : 1600 DF9RJ 53N O : 1628 PA0BAT 43N : F6HYE 55N 44N : 1642 G3LTF 55N 55N : 1700 G3LQR 54N 55N : 1705 SM2CEW 55N 55N : 1716 ON5OF 55N 56N : 1723 DL2OM 53N O : 1730 YU1EV 53N 55N

There were many repeats not listed above as we "chewed the fat" during rare slack periods! Very enjoyable and thanks to all those that came on .. I don't think I missed anyone that may have called.

73 Doug (VK3UM) ... no I have not forgotten 23cms!

### VHF/UHF Column Sub Editor

David VK5KK is currently having great difficulty putting the VHF/UHF column together due to work commitments. He is looking for assistance in collating the column. If you would like to help out please contact David at [David.Minchin@tnbaust.com](mailto:David.Minchin@tnbaust.com)

Editor VK5UE

#### TRADE PRACTICES ACT

It is impossible for us to ensure that the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore, advertisers and advertising agents will appreciate the absolute need for themselves to ensure that the provisions of the Act are strictly complied with.

#### VICTORIAN CONSUMER AFFAIRS ACT

All advertisers are advised that advertisements containing only a PO Box number as the address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.





# Division Directory

The Amateur Radio Service exists for the purpose of self training, intercommunication and technical investigation. It is carried out by amateurs who are duly authorised people interested in radio technique solely with a personal aim and without pecuniary interest.

The Wireless Institute of Australia represents the interests of all radio amateurs throughout Australia. National representation is handled by the executive office under council direction. There is one councillor for each of the seven Divisions. This directory lists all the Divisional offices, broadcast schedules and subscription rates. All enquiries should be directed to your local Division.

**VK1 Division** Australian Capital Territory,  
GPO Box 600, Canberra ACT 2601  
President Alan Hawes VK1WX  
Secretary Deane Walkington VK1DW  
Treasurer Linden Orr VK1LSO

**VK2 Division** New South Wales  
109 Wigram St, Parramatta NSW  
(PO Box 432, Harris Park, 2150)  
(Office hours Tue., Thu., Fri., 1100 to 1400 hrs.)  
Phone 02 9689 2417  
Web: <http://www.wiansw.org.au>  
Freecall 1800 817 644  
e-mail: [vk2wi@ozemail.com.au](mailto:vk2wi@ozemail.com.au)  
Fax 02 9633 1525  
President Terry Davies VK2KDK  
Secretary Owen Holmwood VK2AEJ  
Treasurer Chris Minahan VK2EJ

**VK3 Division** Victoria  
40G Victory Boulevard Ashburton VIC 3147  
(Office hours Tue 10.00 -2.30)  
Phone 03 9885 9261  
Web: <http://www.wiavic.org.au>  
Fax 03 9885 9298  
e-mail: [wiavic@wiavic.org.au](mailto:wiavic@wiavic.org.au)  
President Jim Linton VK3PC  
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**VK4 Division** Queensland  
PO Box 199, Wavell Heights, Qld. 4012  
Phone 07 3221 9377  
e-mail: [office@wiaq.powerup.com.au](mailto:office@wiaq.powerup.com.au)  
Fax 07 3266 4929  
Web: <http://www.wia.org.au/vk4>  
President Ewan McLeod VK4ERM  
Secretary Bob Cumming VK4YBN  
Treasurer Bill McDermott VK4AZM

**VK5 Division** South Australia and Northern Territory  
(GPO Box 1234 Adelaide SA 5001)  
Phone 08 8294 2992  
web: <http://www.sant.wia.org.au>  
email: [peter.reichelt@bigpond.com](mailto:peter.reichelt@bigpond.com)  
President Trevor Quick VK5ATQ  
Secretary Peter Reichelt VK5APR  
Treasurer Trevor Quick VK5ATQ

**VK6 Division** Western Australia  
PO Box 10 West Perth WA 6872  
Phone 08 9351 8873  
Web: <http://www.wia.org.au/vk6>  
e-mail: [vk6@wia.org.au](mailto:vk6@wia.org.au)  
President Neil Penfold VK6NE  
Secretary Roy Watkins VK6XV  
Treasurer Bruce Hedland-Thomas VK6OO

**VK7 Division** Tasmania  
PO Box 371 Hobart TAS 7001  
Phone 03 6234 3553 (BH)  
Web: <http://www.tased.edu.au/tasonline/vk7wia>  
also through <http://www.wia.org.au/vk7>  
email: [batesjw@netspace.net.au](mailto:batesjw@netspace.net.au)  
President Mike Jenner VK7FB  
Secretary John Bates VK7RT  
Treasurer John Bates VK7RT

## Broadcast schedules All frequencies MHz. All times are local.

VK1WI transmits each Thursday evening at 2000 hrs local time on VK1RGI 146.950 MHz and 438.375 MHz including the linked repeater system on VK2RGN Goulburn, VK2RHR High Range, VK2RMP Madden Plains and VK2RTW Wagga Wagga. VK1 Home Page <http://www.vk1.wia.ampr.org>

**Annual Membership Fees.** Full \$80.00 Pensioner or student \$71.00. Without Amateur Radio \$48.00

VK2WI transmits every Sunday at 1000 hrs and 1930 hrs on some or all of the following frequencies (MHz): 1.845, 3.595, 7.146, 10.125, 14.170, 18.120, 21.170, 24.950, 28.320, 29.170, 52.150, 52.525, 144.150, 147.000, 432.150, 438.525, 1273.500. Plus many country regions on 2m and 70cm repeaters. Highlights are included in VK2AWX Newcastle news Monday 1930hrs. on 3.593, 10 metres and local repeaters. The text of the bulletins is available on the Divisional website and packet radio. Continuous slow morse transmissions are provided on 3.699 and 145.650. VK2RSY beacons on 10m, 6m, 2m, 70cm and 23cm. Packet on 144.850.

**Annual Membership Fees.** Full \$80.00 Pensioner or student \$63.00. Without Amateur Radio \$50.00

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web Site.

**Annual Membership Fees.** Full \$83.00 Pensioner or student \$67.00. Without Amateur Radio \$51.00

EVERY SUNDAY, at 9am LOCAL (Sat 2300 UTC). From Far North Queensland On 7.070/2 MHz. From South East Queensland:- 1.825, 3.605, 7.118, 10.135, 14.342, 21.175, 52.525, 147.000, 438.500 MHz. Right throughout VK4 scan 146.6 to 148.0 MHz again at 9am local. SUNDAY 6:45pm hear LAST week's QNEWS broadcast 3.605 and 147.0 MHz from South East Queensland. MONDAY 7:00pm hear YESTERDAY's news again on 146.875 MHz broadcast from Brisbanes Bayside repeater, and then 7:30pm on 3.605 and 147.0 MHz from Sth East Queensland. Text editions on packet internet and personal email, visit [www.wia.org.au/vk4](http://www.wia.org.au/vk4) News is updated 24/7 in both text and audio on this site. MP3 Audio from same website by 2300 hours each Saturday. Contact QNEWS, packet sp QNEWS@VK4WIE.BNE.QLD.AUS.OC email [qnews@wia.org.au](mailto:qnews@wia.org.au)

**Annual Membership Fees.** Full \$95.00 Pensioner or student \$81.00. Without Amateur Radio \$69.00

VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at [www.sant.wia.org.au](http://www.sant.wia.org.au) Broadcast Page area.

**Annual Membership Fees.** Full \$88.00 Pensioner or student \$73.00. Without Amateur Radio \$58.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900, 147.000, 147.200, 147.250 and 147.350 MHz. Also in "Real Audio" format from the VK6 WIA website

**Annual Membership Fees.** Full \$71.00 Pensioner or student \$65.00. Without Amateur Radio \$39.00

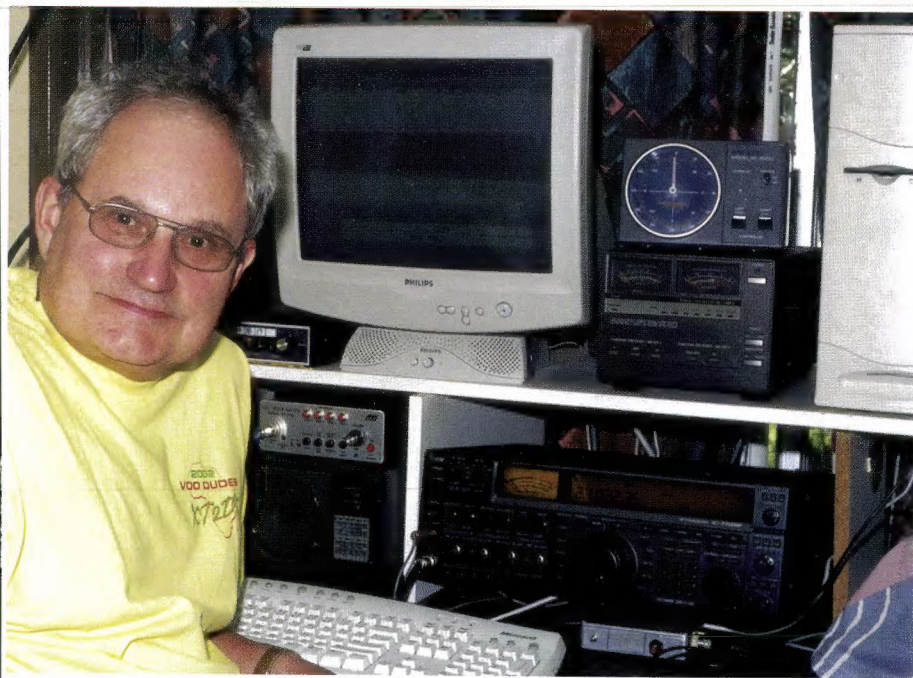
VK7WI: 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RMD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

**Annual Membership Fees.** Full \$90.00 Pensioner or student \$77.00. Without Amateur Radio \$57.00

**VK8** Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz. The broadcast is downloaded via the Internet.



# RSGB President visits Australia



Bob Whelan G3PJT and VK1MJ station



Bob Whelan G3PJT, Ernie Hocking VK1LK and Mike Jenkins VK1MJ

With the number of aspirant radio amateurs in the UK dwindling fast, the RSGB and the Radiocommunications Agency (RA) got together and created the Foundation Licence. Its purpose is to attract a new and young generation of radio amateurs and prepare them for HF operations, and open the door to the use of digital modes and the microwave segments of the amateur bands.

**RSGB's President, Bob Whelan G3PJT**, is currently visiting VK. He has met with VK1 and VK6 members and operated the station of VK1MJ in the RSGB Commonwealth Contest (CW) over March 8/9th. He has talked profusely about the UK Foundation Licence when given the chance

For more details, see VK1 Notes, page 30

## The Versatenna in use – Stationary Mobile or Portable



With this antenna "installation" and 5 (five) watts from the mobile rig-an RH212- Victor VK4WST had solid QSOs from his QTH in Cleveland (adjacent Moreton Bay- Queensland) to the Gold Coast via repeater VK4RGG on Mt Springbrook; a distance of approx. 80kms-also to Manchester U.K; South Australia and USA via repeater VK4RBN and VK4FIL's Echo-Link. It really does work!!

By the way, the driven elements were shortened to 480 mm and the reflectors to 520 mm to allow operation in the 146-147 MHz section of the band with a low SWR.

A description of this installation on the air caused some hilarity!

Victor has since mounted the Versatenna on the folding pole of a defunct sunshade and used it on the antenna mount fitted to the tow bar. Stationary mobile--of course!



# ICOM'S GREAT CHAMPIONS



**QRP**

**NEW**

## IC-703 New HF/50MHz All Mode Transceiver.

Fully portable operation • Built-in antenna tuner • DSP capability • 1.8 - 54 MHz coverage  
• 10W variable step power • Current consumption control • Battery pack available



## IC-718 A compact HF all band transceiver.

A superior performer with simple, straightforward operation with keypad • Optional AF DSP capabilities, including noise reduction & auto notch function • It's versatile, compact & loaded with features.



**NEW**

## IC-2720H The new dual band FM Transceiver

2M / 70CM • Remote head operation • Dual VFO with independent control for each band • 212 Memory channels  
• Wideband receiver • CTCSS & DTCSS encode & decode  
• 9600 bps packet operation • Standard HM133 remote control microphone



## IC-706MKIIG HF • VHF UHF

The amazing evolution of the legendary 706.

Now includes 70cm @ 20W and 50W on 2m  
Standard feature dsp • Built in sub tone encoder & decoder  
Tone scan • Mosfet PA • You get base station performance and features in a mobile rig sized package.

**NEW**

## IC-T90A A new 5W Triband handheld

VHF/UHF FM 2M, 6M, & 70CM  
Wideband receive 495 KHz - 1 GHz  
555 Alphanumeric memories • 13 Scan modes  
DTCS & CTCSS encode & decode  
DTMF encoder (10 memories)  
Wide/narrow transmit capability.



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